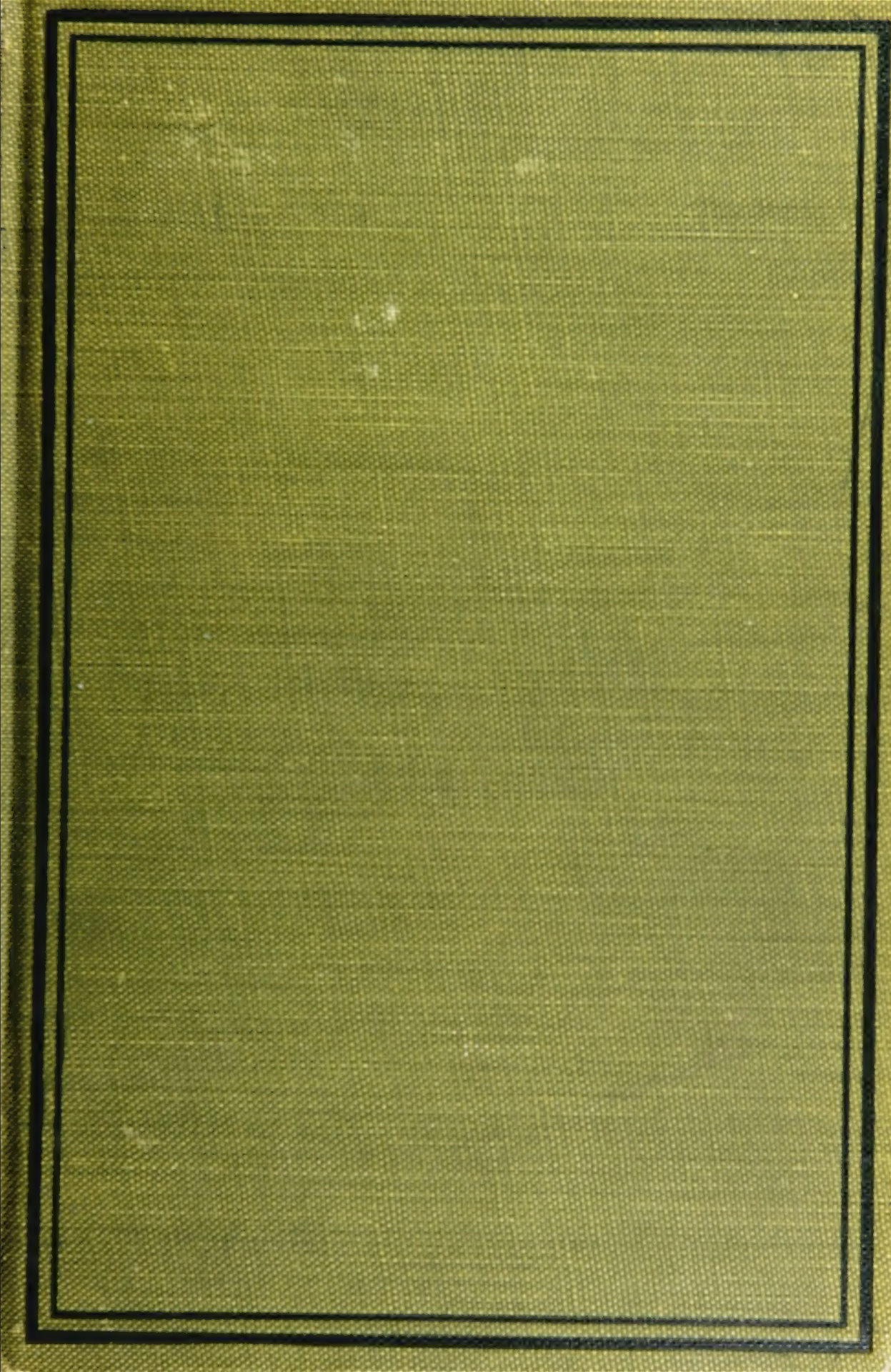




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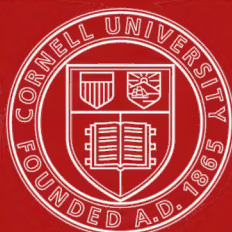


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THE BUSINESS OF INSURANCE

THE BUSINESS OF INSURANCE

A TEXT BOOK AND REFERENCE WORK
COVERING ALL LINES OF INSURANCE

WRITTEN BY
EIGHTY EMINENT EXPERTS

COMPILED AND EDITED
BY
HOWARD P. DUNHAM

In Three Volumes

VOLUME I

NEW YORK CITY
THE RONALD PRESS COMPANY

1912

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PREFACE

The business of insurance has undergone a marked change in the last score of years. Great advances have been made in its scope, its animating spirit and in its methods, until it has now taken a definite, well-assured place in the life of the nation. As a consequence, questions relating to insurance have become of practical importance to everyone. Bankers, lawyers, doctors, manufacturers, farmers; all must henceforth have a more and more intimate personal relation to, and interest in the problems connected with it.

Up to the present time there has been no comprehensive and authoritative text book on insurance to which an inexperienced man could turn for information or an experienced man for reference. Here and there in the field of insurance literature, have appeared from time to time excellent and instructive treatises, but whatever has been printed is mainly in the form of scattered articles and buried reports. Nobody has ever undertaken the work of collecting and properly arranging them.

These volumes are offered as a practical working text book. They are designed not merely for those engaged in the actual business operations of insurance, but for all who wish a broader knowledge of a subject so important in the business world today. The work is published in response to a widespread demand for a non-technical text book on insurance. Its sole aim is to inform and educate men in the subject and thereby add to their understanding and efficiency.

The notable group of experts who have contributed to the present work, gives it an unquestionable position as an exceptional authority. Those who use it will undoubtedly be profoundly impressed with the great value of the observations of these experts of insurance and business.

It is a rare privilege to bring others into touch with such a wide circle of representative and successful men of affairs. I am exceedingly grateful to them for their efforts to make the book a success.

In the compilation of this book, I have had many helpers, to whom I renew acknowledgments and thanks. Particularly do I wish to express my appreciation of the able and effective editorial assistance rendered by William L. Mead, City Editor of the *Hartford Times*, and of the exceptionally excellent work done by Daniel N. Handy, Librarian of the Insurance Library Association of Boston, who prepared the bibliographies which add so materially to the value of "The Business of Insurance."

It has taken much time to gather the chapters, and the date of issue has been postponed from time to time, but the desire to make the book as complete and exact as possible has prevented earlier publication.

HOWARD P. DUNHAM.

HARTFORD, CONNECTICUT,

June 1, 1912.

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PART I
INTRODUCTORY

CHAPTER I

COMMERCIAL EDUCATION

BY FRANK A. VANDERLIP

THE time has passed when it was possible for a man to master the details and theory of a business by merely doing his duty faithfully from day to day. The conditions faced by the present generation of American youth entering industrial or commercial life are new, and in some respects harder than those faced by their fathers. No longer is it possible for a man to rise to the top in commerce or industry without bringing to his task a determination to employ his leisure hours in the acquisition of special knowledge along the lines of his business.

This condition has been brought about mainly through the broadening and increasing complexity of industrial life. With the advent of rapid transportation, telegraphs, cables and telephones have come new demands upon the individual, making it necessary, if he would achieve the broadest success, for him to acquire a broad understanding of sound principles. Technical education was made necessary by steam processes of transportation and production. The demand for technically educated electrical engineers was created by the electric dynamo. So, too, the science of business is being made a quite different thing from the conception of commerce existing two generations ago, by the railroad, the fast steamship, the electric current in telephone and cable, and the great economic business combinations. The enlarged scope of business is demanding better trained men—men who understand principles.

The new and larger scale on which commercial and industrial affairs are now conducted, has introduced into modern business such complexity and such a high degree

of specialization that the young man without the foundation of an exceptional training is in danger of remaining in mere subordinate positions. The neophyte today has little chance to learn broadly, either by observation or experience. He is in danger of becoming a specialist in a narrow field. Without the broad training which comes from looking above his special task, he faces the likelihood of failing of the success of which he may be capable, because the more expert he becomes at any single task, the more likely he is to be kept at it.

Recognizing this tendency, we cannot fail to see the danger we are in of evolving, in our commercial and industrial life, a race of automatic workers, without that diversity of skill and breadth of capability to which we must look for the leaders of the future. By no one must these changed conditions and these increasing dangers be more fully recognized than by our educators. It is to them that we must look for the creation of a new type of education which shall meet these new demands.

We must teach men to think correctly, if we want men who will think for themselves. We must give to men an intellectual interest in their work if we want them to become attached to their work and their positions. We must provide the workingman with an opportunity to be something more than a cog in the great industrial machine, if we would develop in him independence of thought and an active, alert intelligence.

A great part of this improvement will come, of course, from the recognition of these truths by the individual himself. Let a man courageously face the fact that, in following without thought, the daily routine of his work, he is failing of his fullest development, and a long step has been taken. Let him then determine to correct that condition and plan to broaden his outlook through education.

Even granting the inclination on the part of the individual, however, we still face the problem of intelligent

direction of his efforts. It is not to be supposed that every worker is equipped to map out a course of study that will fit him for better things in his own line. Assistance is needed in this direction, and it is here that the modern educator has his opportunity.

To provide for a continuing education, one which shall not cease with the worker's advent into the industrial life, but shall follow and fit him for better things in that life, is not a difficult task. It means no revolutionary change in our present system. The result can be accomplished by providing only an addition. Nor would such a step be a pioneer one, as the system has been at work in Germany on a huge scale, attracting to its benefits thousands of workers and profoundly affecting not only the industrial, but the whole national life of that empire.

Such a step can be accomplished in this country through a movement partly individual and partly the development of our present public school system. The greatest good could be accomplished in this direction if the representatives of organized labor and the representatives of organized capital could unite to plan the work. It is not money that is needed. The taxpayers can readily bear the small additional burden. What is needed is that the leaders of industry and the leaders of labor should recognize their trusteeship, and should give of their time, their hearty interest, their careful thought, their helpful influence and good-will.

If we can but accomplish a recognition, on the part of both employer and employed, of the necessity for this broader training, we shall have taken a long step toward a better understanding between capital and labor, and a long step toward the betterment of the condition of every worker in the industrial field.

Nor must it be understood that these principles apply only to the relations between capital and what is known as organized labor. They apply with equal force to the worker in every field of industry today. Employees of

banks, of insurance companies, and of allied activities are face to face with the same difficult conditions as confront those generally understood when the term industrial workers is used.

The banker, the head of a great insurance company, the employer of clerks in mercantile and other establishments, must come to recognize their responsibilities. They must come to recognize the fact that it is largely from the ranks of their employees that the leaders of the future must be recruited. This recognition on their part must, however, come from their belief in the practicability of such recruiting, as well as from a sense of fairness to those who have worked hard to aid in the upbuilding of their business.

In clerical as well as in other walks of life, however, the employer cannot do it all. He must be assisted in his desire to improve conditions by a live realization on the part of his employees that self-improvement is absolutely essential to growth.

Even were we to provide facilities for self-improvement on the part of employees, it is not certain that we should gain the desired end. Continuation schools, additions to our present public school system, and other means will not necessarily accomplish the end desired. There must be further a recognition on the part of our present leaders that facilities for self-improvement should be provided for those not in position to attend such schools. To this end we must provide text books, which will set forth in clear and simple terms the details of the various classes of business. In the past such text books have been lamentably few. It is only of late years that efforts to provide them have been made by those qualified to present their subjects in practical form. It is to be hoped that such efforts will continue and will bring to the workers in every field opportunities for self-improvement that will broaden their grasp and fit them to be the leaders of the future.

It is in that belief that I welcome such a publication as this. Presenting, as it does, the ideas of men thoroughly qualified to write on the various subjects, it brings together a mass of information that cannot fail to be helpful. I am hopeful that its readers will find in it a stimulus to thought and to further effort that will be of assistance in their efforts toward self-development.

CHAPTER II

INSURANCE EDUCATION

BY HENRY MOIR

THE knowledge possessed by the public on the subject of insurance is very limited, and the basic principles are but poorly understood by people in general. The idea at the root of all plans of insurance is mutual help; this mutual helpfulness has now been brought down to a business condition and is by this means rendered much more effective through its scientific basis than the older plans which partook too much of the nature of charity.

In the older communities if a farmer had his barn burned, it was customary for his neighbors to gather and help him build a new one; if a villager were to die in the prime of life leaving a widow and helpless children, it was a common practice for the other villagers to help not only with the funeral expenses but in even more substantial ways so that the widow and the orphans might be enabled to earn a living; if a fellow craftsman in a city guild were sick, his comrades made him an allowance. All this was admirable and encouraged the virtue of charity; while even today it is often necessary to get together in the same old-fashioned way. But this would be much less necessary if a proper knowledge of insurance were inculcated in the people, and if the clear principles of thrift and foresight were more completely advocated and adopted.

The world is surely old enough to have learned that certain influences, calamities, and visitations are of frequent occurrence, and come so regularly that they seem to be governed by some law; yet no one can tell when or where the mishap may appear, or who may be the sufferer. Fires, accidents, storms, and death all occur when

they are least expected, and insurance forms the only means we have yet been able to devise for anticipating and minimizing the losses so often caused inopportunely.

The earlier insurance companies grew out of sad experience. Men began to see that spasmodic charity did not make provision against the losses sustained. Merchants had to venture valuable cargoes in ships at sea and there was no means of replacing the loss if the ship were wrecked. Warehouses containing merchandise were liable to be burned, and cold commercial business men did not develop the charitable instincts towards their competitors which the rural community would show towards an unfortunate neighbor. Accordingly the custom originated of forming a fund to provide a compensation in money if a ship were wrecked or otherwise lost during a voyage; or to make good the loss to a merchant if his warehouse and merchandise should be burned.

Here we have one of those excellent institutions whose basis is truly philanthropic which was yet devised as the result of selfish forethought. It was not any kindly feeling for their neighbors which made the merchants combine to furnish insurance, but only a selfish desire to protect their own interests and avoid losses which they knew were as likely to strike themselves as their competitors.

Although the benevolent idea of mutual help has been almost lost sight of in the present day business basis, it is none the less at the foundation of all forms of insurance, and we cannot get away from the fact that those fortunate ones who have no fires, and no accidents, or who live to the limit of life must pay a great proportion of the claims made on behalf of the unfortunates. But when the premiums are being paid no one can tell who the next beneficiary may be, and from this viewpoint all share alike. This mutual help is now conducted in such manner that each entrant pays in advance the sum which is scientifically adjusted to the risk he incurs, and surely the

virtue of making ample and suitable insurance provision is just as admirable as the virtue of charity and helpfulness which the old system encouraged; indeed the independent spirit fostered now is of more value to the nation and to future generations than any cultivation of maudlin sympathy. In other words, there is no virtue in *making* poverty in order that there may be an opportunity of relieving it; and 10 per cent. of intelligent prevention through insurance is worth 90 per cent. of charitable cure.

Generally speaking, insurance provides indemnity for loss which may arise at unknown or unexpected times. If, for example, a thousand men are going into battle; they may know that the fight will be fierce, yet they cannot tell which of them nor how many of them may be killed; each man thinks he has as good a chance as his neighbor of coming through safely, but each man realizes the danger to all. So in the matter of fires there may be a thousand houses all having somewhat similar surroundings—no one can tell which is the more likely to burn, but every one knows that each and every house is subject to a certain hazard; also that, however careful householders may be, some carelessness of a servant, or even the purest accident such as a lightning stroke or other calamity, may bring about a loss which might prove quite serious but for the possibility of insurance.

Fire and marine insurance are now fairly well understood by good business men, and all merchants of any consequence have come to recognize their necessity. Education to this extent has been very gradual, largely the result of past losses, but the general fact that such insurance forms a proper business precaution against undue risk, is now thoroughly instilled into the public; it is only in detail matters relating to the differences between classes of risks or hazards that popular education is still weak.

It is, of course, apparent to everyone that the danger

of losing an old and leaky sailing ship is immensely greater than the danger of losing a first class liner whose steam power can keep it away from dangerous rocks in the worst weather. In like manner, the danger of burning up a hay stack near a railroad line cannot be compared with the risk of fire in a modern fireproof building. Accordingly there is a necessity for grading the various risks involved, and this necessity exists under all forms of insurance; a healthy youth of 20 should not pay the same premium for life insurance which is necessary in the case of a man of 65. It follows that in determining the proper premium which should be charged for any particular risk a classification has to be made, all risks of a similar nature being treated as a class; then the total number of claims must be compared with the total number of risks and a "rate of probable loss" obtained which can be made the basis of the premium for that particular class, allowance being then made for expenses, and a margin of safety being also desirable to meet unknown contingencies or furnish a profit.

The rating of risks in their proper classes in this way is a matter of technical training which is obtained partly by experience, partly through study, and partly by the necessities of competition amongst the various companies which transact the class of business under consideration. It is along the lines of such details that insurance education is most important, and a true knowledge requires not only scientific skill but also practical business judgment, as well as a clear insight into human nature.

But all these points are by way of introduction to the general subject of this chapter which should deal, in the first place, with the benefits of an insurance education and the objects to be attained; and, in the second place, with the means now available for securing such an education.

Objects to be Attained

There are two main classifications of reasons for seeking education on insurance subjects. The first deals with the public generally, including the ordinary professional and business man, and the second with the expert in the particular line of insurance to be followed. The alert business man should have a knowledge of sound principles of insurance in order that he may take such steps to protect himself, his home, his business, and his employees as good judgment calls for, since relatively few business men do protect themselves against the contingencies and fluctuations of their affairs to the extent to which they ought. Many of the difficulties which entangle commerce could be overcome by the exercise of the forethought which insurance principles encourage.

Then again, a well educated business man should be able to discriminate between true and doubtful arguments which may be submitted to him on this subject. The business of insurance is one which can stand the fullest investigation and the more it is known the more will it be adopted, and the less will be the cost to the public of securing the necessary protection; at present much of the added expense is caused by bringing the subject into touch with the principal. Frequently also the insured does not fully understand the conditions surrounding the contract into which he may be entering, and this alone furnishes one of the strongest arguments in favor of more general education on insurance.

Of recent years there has been a tremendous exploitation of new ventures in insurance, especially life insurance. The public have subscribed for millions of dollars worth of stock, probably over one hundred millions in the last five years. The sale of this stock has often been effected on extravagant commissions combined with even more extravagant promises and optimistic statements of the great gain to be made from the investment; yet the

people have accepted and believed such representations made to them by stock salesmen and promoters. The result within a few years to come will be an immense loss to subscribers; while a very superficial education on the principles of the business would have prevented many men from being thus imposed upon.

Some of the most intelligent employers of labor have discovered that by introducing insurance principles among their workmen and encouraging them to provide against disaster, they improve the efficiency of their employees to such an extent that their own outlays in this direction are more than made good by the improved conditions in their works. The possibilities in this direction have been known to a few for years, but it is only recently that this knowledge has become more general so that we now hear of sickness funds, accident funds, and pension funds being started in most of the up-to-date factories. A large proportion of the cost of such a plan is usually borne by the business, and of course it is only the larger industrial undertakings, such as mills, factories, railroads and stores where there is a sufficient aggregation of workmen to make this feasible. Sometimes all forms of benefit are provided in a general benevolent organization, managed to a great extent by the men themselves; but to which the employers can always afford to contribute liberally on account of the increased efficiency thus engendered.

Lastly, a general insurance education of this kind is necessary on the part of any citizen who wishes to take an intelligent interest in public affairs, because the main principle is at the root of so many improvements in sociology.

Expert Information

The education of the expert is a different problem, and depends principally upon the particular line to be taken up. In the first place, there is the large army of men and

women employed in salesmanship whose duties lie in bringing the insurance companies in touch with the people who need the insurance. These men and women should understand the nature of the contracts they are offering for sale, the benefits they can offer, and the premiums that have to be charged; if they have in addition to this a general knowledge of the fundamental principles of insurance they are in a much stronger position to answer questions and make apparent the needs of the people with whom they come in contact.

Much of the trouble in handling life insurance arises from the lack of general education on the subject, with the result that the agents have to create a demand for the article they are selling by first proving how desirable it is. There is much economic waste in this condition but the work now imposed upon the field force to bring about even a moderate protection of the public seems a necessity and the economic waste is incurred for the public good until such time as insurance education is fully developed.

The organization of this field force has been largely a matter of natural development, commencing with a few men acting independently and gradually interesting others, these being brought together into companies and afterwards organized into regiments and battalions with their proper petty and superior officers, who, in many instances, rise from the ranks; but who, in some cases, develop from collateral lines. The army idea gives the clearest conception of such a force of field workers, some of whom start from the lowest, yet reach the highest executive positions, while others start out with a better education to commence with and pass into a position of command as the result of tests of their intelligence and education.

Another equally important section of expert work deals with the scientific branch of insurance. This has been

touched upon in the introduction and it ranks on the same plane with the field work since accuracy in this department guarantees the permanence of the organization. Insurance contracts in nearly all instances deal with futures. The person effecting a contract has to pay the cost in advance before the true cost can be determined. A scientific opinion is, therefore, essential to determine that the amount of the aggregate payments by the policyholders shall be sufficient to meet the aggregate claims and necessary expenses. In the case of marine insurance the risk may be determined in the course of a few months; in the case of accident, fidelity and fire insurance the risk may be determined in a period of from one to five or seven years; while in the case of life insurance the risk continues over long terms of years, and may not be determined until twenty, thirty, or more years after the date of the original contract. So long as any risk is outstanding there should be a periodical examination made in order to determine the progress of the business and to make sure that a proper provision is made for liabilities which may yet develop. It is easily seen, therefore, that in this direction a high degree of scientific skill is necessary so that the companies undertaking these future obligations may do so with a certainty that as the obligations mature they will be met.

In the organization of insurance companies there is also necessary a thorough knowledge of the principles of accounting, while specially trained expert medical men, in the case of life insurance, and engineers, in some branches of insurance, must be consulted with reference to the risks undertaken.

Lastly we reach the executive management of companies where a concentrated form of insurance education is necessary, involving, however, in the first place the management of men, and an accurate judgment of human characteristics. These necessities are common to all

executive positions where the guiding head must rely upon his officers and subordinates. In the second place a good knowledge of banking and finance is essential, and over all there must be a broad grasp of all the basic principles of the insurance business, including the main features of law, mathematics, and accounting, each as applied to the class of business with which the executive may have to deal.

Means of Obtaining Insurance Education

During the past forty years there has been a tremendous growth in the training of business men by universities. Forty years ago a business course at college was practically unknown; but such subjects as accounting, banking, commerce, finance, journalism, and salesmanship have gradually been asserting their influence in university life and are now recognized as important branches of study in many of the leading colleges. The subject of insurance has developed still more recently; but since 1897, when it was first introduced by Harvard, there has been a steady and rapid growth so that now there are some 263 colleges and universities in the United States where insurance, either directly or indirectly, is studied and taught. There are thirty-three such colleges with direct insurance courses, while nearly two hundred others include this subject as a branch of economics or sociology—a very suitable section for furnishing a general education on insurance such as is above referred to.

Those colleges which have separate and independent courses in insurance aim at developing experts in the various branches, and do not confine themselves to the giving of such education on insurance as a well educated business man should have. Such general education can be covered in the course of a very brief study which can be furnished either by a few weeks of close application, or, what is better, spread over a year or two in the proper

departments of economics and mathematical courses. But expert knowledge requires careful application over a period of several years.

In college courses the principles of insurance should to a much greater extent than is now customary be referred to and illustrated in mathematics since the science of probability in its practical application is more fully developed by insurance than by any other human agency. Unfortunately, however, most of the mathematical examples and questions which are used in the study of probability are derived from card games, the throwing of dice, games of chance, and gambling generally—all very interesting, perhaps, as scientific playthings, but of far less practical importance than similar questions which must be solved daily in connection with insurance in all its different branches.

In the division of economics and sociology insurance principles are just as necessary and desirable. Not only has the business grown to be one of the greatest social enterprises, but there are still so many undeveloped lines of study which make for human betterment that no student of social science can ignore the subject. Yet the problems now handled in economic courses are only of the simplest, dealing generally with marine, fire and life insurance, whereas there is an even greater field in the organization of sickness funds and pension funds for employees, as well as the furnishing of compensation against involuntary unemployment—a danger which hangs over the head of every man who is dependent upon his own exertions. One state has recently decided to undertake the insurance of its farmers against hail storms and a movement like this which brings to the attention of the people their need of protecting themselves is a fit subject for study on the part of all who are interested in any way in the progress of the nation.

In the department of law there is also much weak-

ness regarding the principles of insurance, and but few lawyers have had any grounding whatever in the fundamental ideas at the root of all insurance plans. The result is that many conflicting decisions have been rendered by judges who frequently have only the haziest notion of the scientific basis of insurance contracts, and who are always recruited from the ranks of lawyers; true progress is delayed by the friction caused by such annoyances and disagreeable incidents.

Lastly, in the department of medicine the skill required by life insurance companies trains a physician as to the effect which habits and physique, environment and family history may have on the average man. Life insurance companies employ thousands of medical examiners; and, while most of these are good diagnosticians, relatively few have the faintest conception of the effect of certain diseases on the average lifetime of the individual, nor do they seem to have studied with any care the mortality statistics dealing with heredity and environment. If a doctor had acquired a knowledge of the effect these influences have on an average body of men or women he could advise his patients more intelligently and would improve his own status as a physician.

When a doctor makes an examination for a life insurance company he is often asked the question "Do you recommend the risk as being first class for life insurance?" The answers received to this question show that the average examiner has not studied his patients or the human frame from this standpoint. Many medical men will recommend as first class a man five feet, six inches tall, weighing 200 pounds, about age fifty, provided they find nothing physically wrong with him, although statistics show that this would not be a fit subject. Or again, they will recommend a man of mature years who shows slight hardening of the arteries, and suggest that this is "no more than is to be expected at

his age." Moreover, they seem to have a very faint knowledge of the effect of occupation on the average lifetime.

Health officers and other medical men also show weakness in statistical methods, which would be greatly improved by a grounding in insurance. They are often content to base conclusions upon general observations, even in matters where an accurate demonstration could be given, while, on the other hand, they frequently make erroneous deductions from incomplete data, especially in comparing health conditions in different localities, comparing the death rate per thousand of new towns in the middle west, built up during the last twenty years by strong, healthy young men and women, with the death rate in an old eastern city like Boston. The death rate in Squeedunk may be twelve per 1,000 and that of Boston nineteen per 1,000, yet Boston may be a much healthier place than Squeedunk. The figures prove nothing.

Education of Experts

Generally speaking, a training in field work is obtained by assisting an experienced man, getting hints from him, and possibly taking a course in salesmanship, which is often of advantage. Some men seem to have a natural gift in this direction whether it is their innate knowledge of human nature, or some unseen sympathy by means of which they influence the people to whom they speak. A field man soon realizes that if once a policy is placed, the man who has it feels the advantage of the protection and does not care to let it go. In other words, the hardest work of an agent is in educating the prospective policyholder to realize the comfort of the insurance protection.

The only means of agency success as a direct result of study lie in (1) a course of salesmanship; (2) adopting methodical systems of keeping in touch with people who may ultimately be interested; and (3) in being truthful

and sincere in the statements to applicants. In the long run the last element is the most important. A man even with poor capabilities can with patience build up a useful and profitable business if he is rigidly accurate in the statements he makes to his clients.

Moreover, in nearly every city of any size there are organizations of underwriters, and by becoming associated with these and meeting others who are interested in the same line of work an intelligent man can always extend his information and receive useful hints. Some of these underwriters' associations even conduct classes where subjects of mutual interest are discussed. Then again, the larger agencies of both fire and life insurance companies generally hold periodic meetings for the benefit of their younger men, and although none of these systems aim at giving a methodical and complete education, nevertheless a man with natural capacity gradually absorbs a sound knowledge of this branch of the business. The result of this system, however, is that in many branches of insurance it takes years of practical experience before a man is capable of holding any kind of important executive position.

Apart from the university courses already mentioned there has been until recently no recognized system of education in the case of fire, accident and miscellaneous forms of insurance. A young man got started in the business by accident or design and had to pick up his scientific information as best he could. Even in fire insurance, where elaborate tariff rates have been introduced, with a careful classification of the various forms of risks, relatively few of the officers have studied the doctrine of probability and appreciate the scientific basis to which all of their premiums must conform.

In Great Britain there is an "Insurance Institute" in nearly all of the large towns. These institutes aim at a spread of education on insurance subjects, especially the

education of young men who propose to give their energies to the business. The constitution of one of these bodies which may be taken as typical of all states that the objects of the institute are:

“ The promotion of the study of the principles of fire and life assurance, and of assurance against other contingencies;

“ The consideration of all subjects to which the doctrine of probabilities may be applied; as well as the best methods of collecting and applying statistics;

“ The consideration of questions bearing on social science or political economy; and

“ The formation of a library of professional works for the use of the members.”

Moreover a federation of these local institutes has been formed, and under the auspices of this federation a journal is published containing selected papers on all branches of insurance. The federation examines students annually, and prescribes a course of study, while it also offers occasional prizes for essays and research work. This form of education has been found to be of real advantage in Britain, and young men who have passed the examinations of the federation have a recognized standing in the particular branch of their studies, as well as in the matter of their general mentality.

In America similar institutes are now being formed, and a central body called “ The Insurance Institutes of America ” was organized at Philadelphia in 1909. The first examination of students was held during 1911. Local organizations have been formed in Hartford and other centres and it is to be hoped that the movement will rapidly spread through all insurance centres because such organizations are of the greatest value in developing scientific work and encouraging research in all branches of insurance.

In life insurance there are recognized scientific societies the world over, and most of them conduct examinations or otherwise test the ability of their members before admission. The most important educative body of this character on this continent is the Actuarial Society of America, which has now in its regular membership 142 fellows, 103 associates, as well as an army of students. Fellows have passed the full curriculum, while associates have shown their efficiency in mathematics and technical matters, and can become fellows on passing the final examinations, which deal with broader subjects in executive management. The fundamental study of this body, as it must be of all branches of insurance, is the "Doctrine of Probability." For a careful study of this science a grounding in mathematics is necessary and the examinations of the Actuarial Society not only cover this particular field completely, but also have a broader range over all phases of life insurance, including a study of mortality rates at different times, in different places, and under varying conditions, the methods of computing premiums, and of valuing the liabilities and assets of life insurance companies, as well as practical subjects relating to the treatment of applicants who may not be quite up to the standard of good, average health, and the treatment of applications for change in policy contracts or for surrender.

Then, too, the examinations of the Actuarial Society require a thorough knowledge of life insurance book-keeping and office practice, also of the laws of the United States and Canada relating to life insurance, the principles of banking and finance, and investments of life insurance companies. In recent years there has also been incorporated a study of sickness insurance, accident and disability statistics, and pension funds, all of these being allied branches and calling for actuarial

treatment. It will be seen that these examinations completely cover all scientific aspects of life insurance, as well as some more important subjects which are of allied interest.

The education of the scientific expert is reasonably complete along these lines; indeed that portion of insurance education which now seems to need most development relates to the education of the people in habits of thrift and foresight, so that they may duly appreciate the advantages of insurance in its varying forms, and thus minimize the cost to themselves. Insurance has a well-recognized scientific value, with its relative cost price, and every advance in educating the people so that the distributing expense may be reduced becomes a social advantage to the nation.

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PART II

FIRE INSURANCE

CHAPTER III

HISTORICAL SKETCH

BY HENRY W. EATON AND M. LEWIN HEWES

THE meaning of the terms insurance and assurance is identical, but it has been customary of late years in England to associate the latter with contingencies affecting life, although in the United States the term assurance is but seldom used.

To insure or assure means to make certain or sure, to make safe—a definition that the applicant for insurance should never lose sight of.

An insurance, then, is a contract of indemnity, in a legal sense, or more particularly a contract between two parties called the insurer and the insured, whereby, for a certain consideration termed a premium, the insurer agrees to pay a sum, in the event of the happening of a fire or other defined casualty, equivalent to the actual loss sustained by the insured, in no case exceeding the sum stipulated in the agreement. This contract is termed a policy of insurance.

Contracts promising indemnity in certain contingencies are legalized as being necessary to trade and commerce, and in some countries are, as with us, subject to state supervision.

Apart from the operations in insurance with which we are ordinarily familiar at the present day, a list of curious hazards that have formed the subject of insurance at different times in the past is appended:

Insurance of the safety of travelers into distant countries, and adventurers upon dangerous and difficult enterprises.

Insurance against captivity—a branch of the preceding.

Insurance of income arising from places of profit or trust—formerly called service insurance.

Insurance against death of public men in times of panic and excitement.

Insurance of the prices of the public stocks and funds.

Insurance of apprentices, viz.: for securing to them a capital with which to commence business.

Insurance of contingencies, arising in connection with births, marriages and burials.

Insurance of adventurers in the success of their enterprise.

Insurance of lottery tickets.

Insurance against surrender of a fortress.

Insurance against robbery and theft.

Insurance against issue coming of particular marriages, and against failure of issue from particular marriages.

Insurance against losses by hail storms.

Insurance against defective titles, where the title, though good for holding, is unmarketable by reason only of such defects.

Insurance of the value of mortgaged property.

Insurance of guarantee of debts.

Insurance of dividends, and compensations from embarrassed and bankrupt estates.

Insurance or guarantee of rents, securing punctual payment whether the property be or be not occupied.

Insurance against trade losses, for the effectual prosecutions of the offenders, and for the detection and prevention of crime.

Insurance of growing crops, as vines, etc., against frost.

Insurance against dilapidation, ecclesiastical, and otherwise.

Matrimonial insurance, providing portions to persons who may marry, and making provisions for them at a certain age if they do not marry.

Insurance against inundations.

Insurance against colliery explosions.

Insurance of mortgages, so as to protect mortgagee from death of mortgagors and all other causes.

Insurance for repairs of houses, etc.

Insurance of commissions on goods ordered and in process of manufacture.

We must seek for the birth of fire insurance in London. It was undoubtedly brought into being by the lessons of the great fire of 1666. This fire began early in the morning September 2 and continued five days. The area burnt over was 436 acres and 13,200 houses were totally destroyed. The fire was ultimately stayed by the blowing up of a number of houses in its line of march. Pepys, that prince of gossips, was of course on hand, burning the soles of his shoes, as he tells us, climbing over the debris in his eagerness to acquire information. He writes that the fire came after a long drought, and that the wind was high. If we are to believe Pepys, it was at his suggestion to the King (Charles II) that houses were destroyed to stop the fire. Following his account, we learn that goods removed from houses were mainly put into lighters at the wharves, and that the churches were used for the reception of movables. On the second day Pepys had himself to move, and he tells us: "About four o'clock in the morning my Lady Batten sent me a cart to carry away all my money and plate and best things to Sir W. Rider's at Bethnall green, which I did, riding myself in my nightgown in the cart, and Lord! to see how the streets and the highways are crowded with people running and riding and getting of carts at any rate to fetch away things."

We must all be glad to hear that Pepys later removed to a place of safety his other effects, this time by lighter. It may, I think, be taken as certain that he was uninsured. A person so particular as Pepys would not, if insured, have lost the opportunity of recording it.

With another reference to Pepys, we pass on. He tells us "the very stones of the churches seemed to burn, and the air appeared to be ignited." (In 1871 like statements were made in the case of the great Chicago fire.) The total damage by fire is variously estimated, but perhaps £12,000,000 can be taken as nearly correct. It is worthy of note that Pepys in his statements regarding the fire—and they are very ample—nowhere gives a hint that sufferers received any help from insurance monies. On the contrary his picture of the destitution is very marked. He says: "I met with many people undone, and more that have extraordinary great losses."

Evelyn says: "The poor inhabitants were dispersed about St. George's fields and several miles in circle, some under tents, some under miserable huts and hovels; many without a rag or any necessary utensils, bed or board, who from delicateness, riches, and easy accommodations in stately and well furnished houses, were now reduced to extremest misery and poverty." And again he says: "I then went toward Islington and Highgate, where one might have seen 200,000 people of all ranks and degrees dispersed and lying along by their heaps of what they could save from the fire, deploring their loss." In the king's proclamation following the fire he says: "And whereas also divers of the distressed persons have saved and preserved their goods, which, nevertheless, they know not how to dispose of, it is his Majesty's pleasure that all churches, chapels and schools and other like public places, shall be free and open to receive the said goods."

We appear, then, to be justified in the conclusion that, until after the great fire of London, fire insurance, as known to us, had no existence. There is certainly no record whatever of any transactions in insurance prior to that time; but it is stated, without support, however, that the Lombards and the Dutch had some organized protection of that kind. In England there is some reason

to suppose that a kind of mutual insurance existed in connection with trade guilds, as a feature of membership: and I believe there is a record of an agreement on the part of a landlord prior to 1666, to indemnify his tenants for loss by fire affecting their leasehold interest, in consideration of a payment added to the rent.

We are led inevitably to the conclusion that at the period under review merchants and tradesmen must have enjoyed a very limited credit; for the bankers of the day would, in the absence of protection against loss by fire to merchandise, fail to perceive that a reliable security for loans was furnished. Mercantile operations, therefore, must have been carried on almost exclusively by men of wealth, and must necessarily have been pursued in a spirit of extreme caution. We can readily imagine that the merchant would be careful to see that his stocks of merchandise would be so distributed in warehouses as to avoid the probability of a total loss by one fire, with its accompaniment of ruin to him; and we can safely assume that the retailer, who in those days lived invariably over his store, would in precautions against fire, guard his property with an increasing vigilance almost unknown in these days, when insurance companies are relied upon to satisfy claims for losses, whether attributable to carelessness, or to causes easily preventable, and within the knowledge of the assured.

Although there is no record of the establishment of any fire insurance company prior to the great fire of London, there is evidence of an application to the Crown, in 1638, for a charter. Charles I, who about that period was afflicted with a parliament, deemed by him to be highly inconvenient, appears to have given the application no encouragement. A singular feature is apparent in the petition. The king is asked to compel by the patent the owners of houses in London, Westminster and Southwark to insure their houses in the proposed company, and at the rate of 1s for every £20 of rent yielded.

Thus, assuming value of houses of the rental of £20 to have been £200, we have an exceedingly low rate, viz.: 1/40 of 1 per cent.; and, if the experience of today is of value in a judgment, then it would appear that Messrs. Ryley and Mabb, the petitioners, were fortunate in that the king's assent was not given, especially as it nowhere appears that any distinction was to be made between frame and brick buildings, and that buildings of all occupations were required to be insured—at least, nothing is said to the contrary.

It was not until 1680, or fourteen years after the fire, that the promoters of a fire company pushed an application with such resolution as to be attended with success. This time—we must assume under some change of the law—application appears to have been made to the city of London.

It may excite surprise at first, that so long a period was allowed to elapse after so thorough a demonstration of the need of fire insurance, as was furnished by the great conflagration; but, on reflection, we see that the city was prostrated. Prior to the fire, London had suffered disastrously from the plague, and, by the fire, four-fifths of the city was swept away, including the portion devoted to the mercantile interest.

To the year 1680, then, may be assigned the birth of fire insurance.

In that year there was established a company known as "The Fire Office." Its promoters were Samuel Vincent, Dr. Nicholas Barbon, John Parsons, Felix Alvert and others; but we are not informed under what authority the organization was effected. The rates for insurance were much higher than those proposed by Messrs. Ryley and Mabb forty-two years earlier, being 6d per £1 rental for brick houses and 1s per £1 rental for frame houses.

In this instance, as before, values of houses are assumed to be equivalent to ten annual rents, so that the

rates proposed were really $\frac{1}{4}$ of 1 per cent. for brick houses and $\frac{1}{2}$ of 1 per cent. for frame houses. Nothing is said about rates for factories, inns, stores and warehouses, and we may assume that in those early days no distinction in risk was made. The word "house" alone is used in the prospectus issued.

Term insurance was sanctioned at the following rates:

Seven years for five annual premiums, eleven years for seven annual premiums, and for thirty-one years eleven annual premiums.

It may be well to devote some further time to an examination into affairs of this date to show that the first idea of the people, as evidenced by the voice of the representatives in the city council, was favorable to insurance by the municipality. In 1681, by resolution of the common council of the city of London, it was determined that the corporation should receive proposals for "Insurance of houses in case of fire." The annual rates were 3s. 9d. per £100, and double for timber houses, the terms being 25 per cent. lower than those of "The Fire Office." The last named at once came out with a circular offering to reduce their rates, being "resolved rather to run the hazard of losing than that the city should make advantage by their 'invention,'" and so we have at once a competition. The experiment of the city came to a sudden and unsatisfactory ending. In a year and a month after beginning operations it was resolved to abandon the design, and the chamberlain was instructed to cancel existing policies. The policyholders, however, had apparently some difficulty in getting their money. So ended the only experiment in insurance by a municipality on record to my knowledge.

In 1684, was instituted "The Friendly Society" on a plan of mutual contribution. Subscribers were called upon to pay seven-tenths of 1 per cent. on the insurance on brick houses as a deposit, and about $\frac{15}{100}$ of 1 per cent. for expenses, and were liable to pay, if called upon,

as much as $4\frac{1}{2}$ per cent. as assessment in any one year. Double these terms were applicable to timber buildings.

In 1696 was established, under the name of the "Amicable contributors for insurance from loss by fire," the office long known as the "Hand in Hand," which, up to within a very recent period, was actively conducting business.

In the United States the first fire insurance company to be organized was the Philadelphia Contributionship, which was formed February 18, 1752. Its plans were similar to the Hand in Hand, and its first house mark was four hands clasping wrists.

Owing to the bad experience from fires in houses having trees in front of them, the Contributionship decided in 1781 that such houses should not be insured because the trees made it difficult to fight fires. Naturally, in a city like Philadelphia, this action caused considerable opposition and as a result, on February 27, 1786, the Mutual Assurance Company was organized. As a house mark this company had a green tree, cast in lead, fastened to a shield-shaped board, affixed to the front of the insured property. Both of these companies are still in existence.

It has been stated by an eminent authority that the lack of fire insurance in those primitive days before the Revolution was supplied by the voluntary contributions of friends and neighbors after a fire.

In 1794 were established in Philadelphia the Insurance Company of North America and the Insurance Company of the State of Pennsylvania. Both of these stock companies were organized to transact marine insurance, but during the first year of the North America's existence, it was decided to add the business of fire insurance and the proposals for insurance were completed in the latter part of the year.

Two general hazards were provided for; the first class including common insurance and providing for brick or stone houses, stores and furniture or merchandise

therein, while the second included those houses which were not wholly brick and stone and such extra hazardous goods as pitch, tar, turpentine, etc. For the first class the rate was 30 cents per 100 on an \$8,000 policy and 45 cents on a policy not exceeding \$16,000; while in the second class the rates were 75 cents per \$100.

At the close of the eighteenth century, twenty-two companies in all, had been formed, and of these, eight were conducted on the mutual principle.

For a few years ending in 1810, business had been regularly transacted in the United States by but one foreign company, the Phoenix of London, through a resident agent in Philadelphia. This company entered the United States as early as 1804, Israel Whelen being its agent in Philadelphia.

In 1810 an act was passed in Pennsylvania prohibiting all insurance by foreign corporations, co-partnerships, or persons not citizens of the United States, and the Phoenix withdrew.

The text of this act is of interest and may be read in the acts of the general assembly of the Commonwealth of Pennsylvania, being approved March 10, 1810.

By its provisions any person who acted as agent for a foreign company was liable to a fine of \$5,000, one-half to the use of the commonwealth and the other half to the use of the informer and if any citizen of Pennsylvania made or renewed a policy with such foreign company he was liable to a fine of \$500.

A similar law aimed directly at the Phoenix was passed in New York, March 18, 1814.

In the law it was stipulated that whereas a certain company or association of persons in England, under the name of the "Phoenix Insurance Company," have appointed agents and established offices in this State, for the purpose of making insurance in this State, on behalf of said English company or association:

Therefore it was resolved that it should be unlawful

for any person residing in any foreign country, or for any association or company of persons residing in any foreign country, or for any incorporation established in any foreign country, or for any person whomsoever, on behalf of any such person, association, company or corporation, directly or indirectly, to make any contract of insurance, or by way of insurance, against loss or injury by fire, upon any house, building or goods, situated or being in this State.

The penalty was a fine of \$1,000 to be paid to any person who shall sue for same.

A note appears at the end of the Act as follows:

“ As during a state of war, foreigners, especially alien enemies, could not be coerced by any of our courts of justice to the performance of their contracts; this act for this, among other reasons, was adopted by the legislature. It is proper to mention that Chancellor Kent dissented to its passage in the Council of Revision.”

These drastic laws, however, were found to be unjust, and later the laws were rescinded, and in 1848 the “ Liverpool and London ” entered the United States, followed in 1851 by the “ Royal.” There are today in the United States thirty-seven foreign fire insurance companies.

The first companies to establish what is known as the agency system were companies incorporated early in the last century at Hartford, Conn., the “ Hartford ” and the “ *Ætna* ” and the foundations were then laid of a business which, since diligently fostered and pruned, furnishes, almost invariably, the best results reported by any class of stock companies.

An address read before a meeting of agents held at Niagara Falls by the late Charles B. Whiting, formerly secretary of the Hartford and later president of the Orient, contains much curious information of insurance in this country during the early part of the last century.

Policy No. 1 of the Hartford covered a builder's risk of

\$4,000 for three months at twelve and one-half cents. No. 5 took \$11,000 on a gin distillery at one and one-fourth per annum. No. 21, \$20,000 on a stock of dry goods at seventy-five cents. No. 22, \$20,000 on a stock of hardware at twenty-five cents. Within a few weeks from birth the company was taking single risks thirty-three per cent. in excess of its entire cash assets.

The hazard was not as great as it seems for the insured was obliged to run the gamut of a regular personal examination before a policy would be issued and then but a small amount was written on any one property. The insured was obliged to carry a material portion of the loss himself.

Persons desiring insurance solicited it as a privilege from the officers of the company. A man of bad reputation found it difficult to obtain a policy.

At first no commissions were paid to agents, their compensation coming from the survey which was obliged to be filed with the application for the policy and the policy fee, both of which fees were collected from the insured.

There have been but few great American conflagrations. The first was that of December 16, 1835, in New York, which destroyed property to the value of \$15,000,000 and bankrupted twenty-three out of twenty-six New York companies.

The property losses through conflagration in the United States and Canada since the New York conflagration where the amount has exceeded that of the New York conflagration are as follows:

San Francisco,	1851,	(two fires),	3,750 buildings,	\$16,500,000
Chicago,	1871,		17,430 "	168,000,000
Boston,	1872,		1,776 "	75,000,000
St. Johns, N. F.,	1892,		600 "	25,000,000
Baltimore,	1904,		1,450 "	50,000,000
San Francisco,	1906,			350,000,000

As a noteworthy feature it is a fact that fewer fire insurance companies were broken through the tremen-

dous loss sustained by the San Francisco disaster of \$350,000,000 than by the Chicago conflagration involving \$168,000,000, or even by the New York conflagration of 1835 involving but \$15,000,000—offering evidence as it does not only that the interests of the insurance companies were probably under more scientific control, and that they had evidently more than kept pace with the enormously increasing responsibilities, but likewise demonstrating that in all probability they will be able in the future to meet any strain that they may be submitted to.

If this condition were an assured fact rather than a fairly assumed conclusion, then fire insurance will have reached the ideal, namely, absolute protection against loss by fire.

In the history of the business of insurance a student must firmly fix into his head that in the first epoch any person was allowed to insure any hazard at any rate. Insurance was usually undertaken during this period by an individual underwriter or a body of underwriters to protect some enterprise in which they were personally interested, usually a marine risk.

Most of these contracts were by parol. Gradually the business spread and other insurances were invented. Experience showed the importance of having many contingencies that were likely to arise definitely provided for and hence the evolution of the insurance policy.

Then came the establishment of the pioneer companies followed by an age of costly experiment.

Epoch No. 3 followed the great New York fire of 1835, which swept out of existence most of the New York companies. This fire closes the pioneer period of American fire insurance.

After this great conflagration steps were taken by the states to make the companies more secure.

Massachusetts was the first state to require the maintenance of a fund to insure fire contracts. This was the

beginning of what is known as the unearned premium fund.

Then followed a policy and rate war between the companies which proved finally to be so costly for the insured, the companies vying with each other in the liberality of their contracts and premiums.

In 1866, the companies, realizing the havoc this war was causing, got together and formed the National Board of Fire Underwriters, which co-operated the interests of the several companies.

Through this board was brought what is known as the Standard Policy. Through this board has also been established what is known as the Underwriters' Laboratories of Chicago whose work is along the line of fire protection, engineering and testing of devices and materials having a bearing on fire hazard.

Schedule Rating

There has been introduced and taken up generally by the companies the system of what is termed "schedule rates," meaning that each risk is rated according to its own defects or advantages, starting with a basis rate for a "standard" risk of the kind and charging for deviations therefrom, or crediting for any advantages therein, through fixed amounts, rather than the original plan pursued in naming a flat rate in the judgment of the party making it.

Salvage Companies

It being the experience of the leading underwriters that there was frequently loss either to the companies or the assured through the method of disposing of damaged property, there has within the same period of time been organized salvage companies owned and operated by the insurance companies, the two principal of which are located in New York and Chicago, respectively, and with branches in other important cities. These companies not

only have the facilities for properly handling the damaged goods, but they have experts who visit the scene of the fire and advise with the representatives of the companies as to the best method of disposing of the loss to the advantage of all, and the whole operation being conducted upon a basis of a little better than cost the result has been of the greatest advantage not only to the companies but the assured, who frequently does not know or cannot determine what his loss would be, and in making any sort of guess-work settlement must run chances of either taking too little or too much.

In addition to this feature, this method has largely eliminated what was a growing evil, namely the connivance between different interests to make illegitimate profits out of the assured's and the companies' necessity.

Adjustment Bureaus

Those vitally interested in the business likewise learned through experience that a great deal of money and time was lost, and confusion incurred, through the method of the adjustment of losses by companies each having their own representative, so that not infrequently as many as fifteen or twenty-five adjusters would be present on one loss where three would probably have been quite as competent to do the work.

This has led to the organization by the companies of adjustment bureaus owned and operated by the companies, the two principal of which are in New York and Chicago, with branches in several important cities. The advantages that have been derived not only by the companies in the way of reduced cost but by the assured in the systematic handling of their adjustments would be difficult to over-estimate.

Notwithstanding these great forward movements in the business looking toward the perfecting of the protection, the proper adjudication of the fire cost, the economical and expeditious disposition of the damaged property and

the proper adjudication of the loss or damages, the underwriting cost of the business has tended to increase, due partly to the increase of all cost in the United States, and which in turn is the natural outcome of prosperity, and partly to the natural desire of each company to advance its own income. This is now the last great question before the companies for solution, and material progress is being made in this direction. Undoubtedly the problem will be solved, at least to a material degree.

Record of Fire Losses for Past 35 Years

The fire losses in this country and Canada during the past thirty-five years aggregate \$5,181,345,425, on an annual average of \$148,038,440. From the following table giving the losses by years during the past thirty-five years it will be seen that there has been a steady increase in the country's fire waste, and that, notwithstanding all the factors for the reduction or prevention of fire losses that have lately come into existence, the losses continue abnormally heavy.

1911.....	\$234,337,250	1893.....	\$156,445,875
1910.....	234,470,650	1892.....	151,516,000
1909.....	203,649,200	1891.....	143,764,000
1908.....	238,562,250	1890.....	108,993,700
1907.....	215,671,250	1889.....	123,046,800
1906.....	459,710,000	1888.....	110,885,600
1905.....	175,193,800	1887.....	120,283,000
1904.....	252,554,050	1886.....	104,924,700
1903.....	156,195,700	1885.....	102,818,700
1902.....	149,260,850	1884.....	110,008,600
1901.....	164,347,450	1883.....	110,149,000
1900.....	163,362,250	1882.....	84,505,000
1899.....	136,773,200	1881.....	81,280,000
1898.....	119,650,500	1880.....	74,643,400
1897.....	110,319,650	1879.....	77,703,700
1896.....	115,655,500	1878.....	64,315,900
1895.....	129,835,700	1877.....	68,265,800
1894.....	128,246,400		

Total for 35 years..... \$5,181,345,425

The record of fire losses by months during 1911 affords an interesting comparison with the monthly losses of 1909 and 1910. It will be noted that during the past

two years, contrary to the normal conditions, the losses during the summer months have been extremely heavy, reflecting the severe climatic conditions. The following table gives the losses by months during 1909, 1910 and 1911:

	1909.	1910.	1911.
January.....	\$22,735,000	\$15,175,400	\$21,922,450
February.....	16,131,000	15,489,350	16,415,000
March.....	13,795,400	18,465,550	31,569,800
April.....	19,345,300	18,091,800	17,670,550
May.....	17,360,400	18,823,200	21,422,000
June.....	14,435,900	13,183,600	20,691,950
July.....	15,830,900	26,847,900	25,301,150
August.....	16,423,000	21,570,550	12,662,650
September.....	15,043,000	11,700,000	11,333,250
October.....	17,765,200	37,183,300	13,945,000
November.....	14,808,550	16,407,000	18,680,600
December.....	19,975,500	21,528,000	22,722,850
Total for year.....	\$203,649,150	\$234,470,650	\$234,337,250

While there is no authentic record of all the outbreaks of fire in this country, it is generally known that the figures, if they could be presented, would serve as a monument to the carelessness of the nation. A carefully compiled record of the fires credited with causing a property loss of \$10,000 or over in each instance shows that there were no less than 3,410 such fires during 1911. This compares with 3,225 fires in 1910 and 3,270 in 1909.

Governmental vs. Corporation Insurance

It would seem entirely fair to assume that the business of fire underwriting, or of indemnifying the owner of property against loss or damage by fire, can be properly and reasonably conducted through private corporations as well as by the government, and this can be done with no additional cost, and certainly in a more progressive manner, and better fitted to the requirements or the necessities of a country like the United States, where the people, business and construction are subject to such radical and frequent change in its almost terrific progress. Especially is this so when we consider that the federal

government could not engage in the undertaking without infringing on the rights of the states, and no one state could undertake it without incurring the risk of bankruptcy, and the consequent absolute inability to dispose on a market of any state security. This was very fully shown in the \$350,000,000 loss at San Francisco.

So that while it may seem to us engaged in the business that the progress is slow, when we bring before us the history of its very recent years, we find that it has more than kept pace with the developments of every other line of industry or profession.

Standard Policy

There seems to have been in the last twenty-five years but one retrograde movement, and this is the undertaking by several of the states to adopt "standard" policies for that state different in its conditions from the standard adopted by the state of New York. It goes without saying that the advantage in the standard policy is exactly in proportion to its becoming universal. If each state had a standard of its own, and different from the other states, practically all advantage of the standard policy to the assured is done away with. There has been going on in this country for a number of years an effort to secure uniform divorce laws, uniform bills of lading, uniform bankrupt laws, and sundry other interstate conditions, and all are making progress, but the standard fire policy. The idea of the standard fire policy was that in course of time everyone would know its conditions without reading it, precisely as everyone knows to more or less degree the common law. It is almost impossible for the individual to undertake to read the printed conditions of his insurance policy. He is liable to forget it, and he is liable not to understand it if he does read it, and his lawyer is liable to know not much more about it than he does, but since the adoption of the standard New York policy nearly all of

its conditions have been passed upon by the higher courts and many of its conditions now are known to nearly all property owners, and while it is true that if each state had its own standard policy the people of that state might become acquainted with it, yet the general knowledge would not be acquired nearly so fast as if all states had the same policy, to say nothing of parties living in one state and owning property in another.

It is to be hoped that some means will be devised whereby in the course of time some one form of policy contract may be adopted by all states, and this desirable end should be kept constantly in view.

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CHAPTER IV THE POLICY

BY EDWARD R. HARDY

THE word "policy" comes from the Italian "*polizza*." The policy of insurance is the written document recording the agreement entered into between the parties, the insured and the insurer. It is a contract and subject to the general rules of all contracts with the exception that, being one of the earliest forms of contract which became crystallized in the affairs of men, it has many things which are not explainable by the strict law of contracts. In other words, among the merchants a great many customs grew up in the transaction of their business. These customs passed over and were perpetuated in their insurance contracts. This bringing over from the early days accounts for many of the differences which exist between the policy and the general run of contracts.

The oldest policies in existence are, of course, marine, since that was the first form of insurance which was brought to a commercial basis, with well defined laws and usages. By the time fire insurance, in 1667, the year succeeding the London fire, was set up on a commercial basis the marine policy was already an established fact. We have no record of the form of policy issued by Barbon, the first fire underwriter in London, but from that time copies of the various policies have come down.

In the very beginning the policy itself was a somewhat simple document setting forth a few facts concerning the property, the amount of insurance, the premium, the time, and the names of the insured and insurer. The prospectus which the earlier offices issued was quite a comprehensive document and was referred to in the policy as included and forming a part of the policy. Hence in the event of there being a disagreement or law suit,

not merely the policy but the prospectus would have to be produced to ascertain the full document that was really under consideration. Most of the matter that was contained in the prospectus in time passed over into the policy itself. Today, of course, it has entirely done so.

The policy issued in the year 1687, twenty years after the first fire insurance office was established in London, is shown later.¹ This is generally supposed to be the second oldest form of fire insurance policy in existence, one older issued by the Corporation of London in 1682, being the oldest. The Corporation, however, did so little, if any, business that it is hardly a record of an exact transaction like that of the Friendly Society. The Friendly Society commenced business probably August 28, 1684. This policy, being dated the 18th of December, 1686, and numbered 2966, gives an idea of the volume of business transacted in that period.

It was natural in the United States when the fire insurance business was started that the practices of England should be followed. Most of the commerce had been with that country and the commercial usages and forms were very largely taken therefrom. The early marine policies, in order to add solidity to themselves always stated that the insurance was as good and binding as though it was made in Lombard Street.

In the United States, two early forms are of interest, one being policy No. 5 of the Mutual Assurance Company of Philadelphia, commonly known as the "Green Tree" company, issued December 14, 1791.² A third is the second policy issued by the present Hartford Fire Insurance Company and dated February 8, 1794. This last policy is extremely interesting, especially as showing the breadth of the hazard insured against, since, after stating many ways by which the property was covered against the danger by fire howsoever caused, it adds this broad language: "thought of or not thought of in what manner so ever the damage by fire might happen."

¹ See illustration facing page 50. ² See illustration facing page 52.

From this early period up to the year 1873, each company engaged in the business of fire insurance was at liberty to prepare its own contract. There were on some of the statute books of the different states certain provisions which had to be incorporated in the policy, but these provisions did not by any means cover the document as a whole nor begin to do so. Practically unrestrained except by their own interest, the companies prepared and issued their policies. A certain uniformity was forced when the insurance desired on single properties became too large to be covered by any one company. As early, for instance, as 1817, there were propositions by the companies in New York City which were then acting in harmony to have certain standard forms as for rent and some other matters. The National Board of Fire Underwriters, organized in 1866, also prepared in due course a uniform policy which all the companies might use. It can readily be seen that self-interest, whether right or wrong, was a sufficient barrier to the general adoption of a common form of policy. No two underwriters would agree as to the exact property which they wished to cover or as to the exact language in which they wished to state the risk assumed, so while there was a general agreement, it is equally true that there was a general disagreement among the various policies issued by the different companies.

In the year 1873 the State of Massachusetts prepared and adopted a standard form of policy which was permissive only and not mandatory. Any company choosing to adopt it could do so but there was no compulsion about the matter. Not until October 1st, 1881, did the policy become mandatory in Massachusetts, and this was the first state in the United States to do so. The student can gain no better idea of the conditions just preceding the adoption of the standard policy than the decision of the presiding judge, which reads in part as follows, in the famous case of *Delancy v. Rockingham Farmers Mutual Fire Insurance Company*, 52 New Hampshire, 581, June, 1873:

“ The principal act of precaution was to guard the company against liability and losses. Forms of applications and policies (like those used in this case) of a most complicated and elaborate structure were prepared and filled with covenants, stipulations, provisions, rules, regulations and conditions, rendering the policy void in a great number of contingencies. These provisions were of such bulk and character that they would not be understood by men in general, even if subjected to a careful and laborious study; by men in general they were sure not to be studied at all. The study of them was rendered particularly unattractive by a profuse intermixture of discourses on subjects in which a premium payer would have no interest. . . . It was printed in such small type and in lines so long and so crowded that the perusal of it was made physically difficult, painful and injurious. Seldom has the art of typography been so successfully diverted from the diffusion of knowledge to the suppression of it. There was ground for the premium payer to argue that the print alone was evidence, competent to be submitted to a jury, of a fraudulent plot. It was not a little remarkable that a method of doing business not designed to impose upon, mislead and deceive him by hiding the truth and depriving him of all knowledge of what he was concerned to know, should happen to be admirably adapted to that purpose. As a contrivance for keeping out of sight the dangers created by the agents of the nominal corporation, the system displayed a degree of cultivated ingenuity which, if it had been exercised in any useful calling, would have merited the strongest commendation.

“ Traveling agents were necessary to apprise people of their opportunities and induce them to act as policyholders and premium payers under the name of ‘ the insured.’ Such emissaries were sent out. The soliciting agents of insurance companies swarm through the country, plying the unexperienced and unwary, who are ignorant of the principles of insurance law and unlearned in the distinctions that are drawn between legal and equitable estates. *Combs v. Hannibal Savings Insurance*

Company, 43 No. 148, 162; 6 Western Insurance Review, 467, 529.

“ When a premium payer met with a loss, and called for the payment promised in the policy which he had accepted upon most zealous solicitations, he was surprised to find that the voluminous, unread and unexplained papers had been so printed at headquarters and so filled out by the agents of the company as to show that he had applied for the policy. This, however, was the least of his surprises. He was informed that he had not only obtained the policy on his own application, but had obtained it by a series of representations (of which he had not the slightest conception) and had solemnly bound himself by a general assortment of covenants and warranties (of which he was unconscious) the number of which was equaled only by their variety and the variety of which was equaled only by their capacity to defeat every claim that could be made upon the company for the performance of its part of the contract. . . . With increased experience came a constant expansion of precautionary measures on the part of the companies. When the court had held that the agents’ knowledge of facts not stated in the application was the companies’ knowledge, and that an unintentional omission or misrepresentation of facts known to the company would not invalidate the policy, the companies, by their agents, issued new editions of applications and policies containing additional stipulations to the effect that their agents were not their agents but were the agents of the premium payer. . . . Before that era it had been understood that a corporation—an artificial being, invisible, intangible and existing only in contemplation of law—was capable of acting only by agents; but corporations pretending to act without agents, exhibited the novel phenomena of anomalous and nondescript, as well as imaginary beings, with no visible principal or authorized representative; no attribute of personality subject to any law or bound by any obligation, and no other evidence of a practical, legal, physical or psychological existence than the collection of premiums and assessments. The increas-

WHEREAS *William Smiley Esq. of Hartford*

or whom else it may concern, wholly or partly, Friend or Foe, doth make Assurance *on his House*

against Fire, and all Dangers of Fire; moreover against all Damage which on Account of Fire may happen, either by Tempest, Fire, Wind, own Fire, Negligence and Fault of own Servants, or of Neighbours, whether those nearest or furthest off; all external Accidents and Misfortunes; thought of and not thought of, in what Manner soever the damage by Fire might happen; *for the term of one year commencing*

on the eighth day of February 1794 and ending on the eighth day of February 1795, both at twelve O'clock at Noon valuing specially and voluntarily the said House at the Sum Insured

And the Assured, or whom it may concern, in case of Damage, or Hurt, shall need to give no Proof nor Account of the Value; but the producing this Policy shall suffice. And in case it should happen that the said *House* the Whole or Part, are burnt and suffer Damage, on that Account, we do hereby promise punctually to pay and ratify, within the space of three Months after the Fire shall have happened, due Notice having been given to us, and no Deduction to be made from the Sum assured except Two and an Half per Cent. provided said Loss amounts to Five per Cent. under which no Loss or Damage will be paid. And in case of a partial Loss, all that shall be found to be saved and preserved, shall be deducted, after the Deduction of the Charges paid for the saving and preserving; and concerning which the Assured shall be believed on his Oath, without our alleging any thing against it. And so we the Assurers are contented, and bind Ourselves and Goods present and to come, renouncing all Cavils and Exceptions contrary to these Presents, for the true Performance of the Premises, the Consideration due unto us for this Assurance by the Assured, at and after the Rate

of one half per Cent

Reciprocally submitting all Differences to two Persons, One to be chosen by the Assured out of Three to be named by the Assurer, the other by the Assurer or Assurers, out of Three to be named by the Assured, who shall have full Power to adjust the same; but in case they cannot agree, then such two Persons shall choose a Third, and any Two of them agreeing, shall be obligatory to both Parties.

IN WITNESS WHEREOF, We the Assurers have subscribed our Names and Sums assured in

Hartford the *8th* Day of *February* One Thousand Seven Hundred and *Ninety four*

\$800, Sanford & Madeworth } *Eight hundred Pounds*
for the Hartford Fire Insurance Company

ing number of stipulations and covenants, secreted in the usual manner, not being understood by the premium payer until his property was burned, people were as easily beguiled into one edition as another, until at last they were made to formally contract with a phantom that carried on business to the limited extent of absorbing cash received by certain persons who were not its agents.

“ When it was believed that things had come to this pass, the legislature thought it time to regulate the business in such a manner that it should have some title to the name of insurance and some appearance of fair dealing.”

The second state to adopt a standard form of policy and require its use was the State of New York. This was done in 1886, the policy becoming mandatory May 1, 1887. The latest state to adopt a standard form was that of California, where it became effective July 1, 1909. The importance of its commercial interests lent to the New York policy a certain wide use which has not been attained by any other of the standard policies. It naturally followed that the New York form as other states adopted standard policies was the one which was most frequently used, if not in its completeness at least almost so. It would be well therefore to use as an illustration of the policy of insurance that of New York in preference to that of any other state.¹ The provisions of the law concerning the policy are, briefly:

That no policy of insurance may be issued in the state different from the one prescribed; the policy must conform in blank spaces, size of type, context, provisions and agreements with the blank form of the contract or policy duly deposited with, at that time the Secretary of State, but now the Superintendent of Insurance.

Certain things may be added to the policy, as the following:

First. The name of the corporation, location, place of

¹ See Appendix for Form of Standard Policy.

business, date of incorporation, stock or mutual, names of officers, number and date of policy and the words: "This policy shall not be valid until countersigned by the duly authorized manager or agent of the corporation at"

Second. Printed or written description commonly called a form, schedule or list of property covered and any matter designed to clearly express the facts and conditions of the particular risk. Such statements must not be in conflict with the provisions of the standard policy.

Third. If approved, any statement which the corporation is required by law to insert in its policies, which statements are not in conflict with the standard policy.

The standard policy, as printed in blank form, makes a somewhat unwieldy document. The shape and size has the merit of age, but it is being changed to a form suitable for insertion in the ordinary typewriter. The policy is numbered line by line for convenience of reference, and nearly every line, in fact almost every word of every line has been the subject of judicial decision. The first six lines read as follows:

"In consideration of the stipulations herein named, and of Dollars Premium, does insure for the term of years from the day of 1911, at noon, to the day of 1911, at noon, against all direct loss or damage by fire, except as hereinafter provided, to an amount not exceeding Dollars, to the following described property while located and contained as described herein, and not elsewhere, to wit:"

The policy represents a growth in the relations of the insurer and insured, that growth being measured by the time that has elapsed since the first policies were sold up to the present time, for even up to this day minor changes are made in the standard policies in some of the states. The policy itself, while a matter of growth has also embodied in it the results of many a court decision. Perhaps it is not too broad a statement to make that



N^o: 5.

THIS POLICY witnesseth, That Archibald McCall of the City of Philadelphia Merchant

having become, and by these Presents becoming a Member of the MUTUAL ASSURANCE COMPANY for Insuring Houses, &c. from Loss by Fire, within the City of Philadelphia, and ten Miles round the same, do Perpetually pursuant to a Deed of Settlement, bearing Date the 21st of October 1791. And for and in Consideration of the Sum of Seven hundred in Hand paid by the said Archibald McCall to the Treasury of the said Assurance Company, being the Consideration for insuring the Sum of Seven hundred

Pounds unto the said Archibald McCall his Executors, Administrators, and Assigns, upon

the Southern Mocty of his House, situate at the North West corner of Second & Pine Streets, dividing this from the Northern Mocty, by a Partition running East West, the said House being forty feet front, & thirty four feet deep, three stories high, and two Cress behind the House to this Mocty.

This Insurance Commencing the 14th day of December 1791. being a Reinsurance.

during the Term of Seven Years from the Date hereof, which said Sum of Seven hundred is hereby declared to be deposited by the said Archibald McCall as a Pledge or Caution for the Performance of the Agreements comprised in the said Deed of Settlement on his Part from henceforth to be performed. Now We the Trustees of the said Assurance Company, for and in Consideration thereof, do hereby order, direct and appoint the Treasurer for the Time being of the said Assurance Company, according to the said Deed of Settlement, to pay and satisfy unto the said Archibald McCall his Executors, Administrators, or Assigns the Sum of five hundred

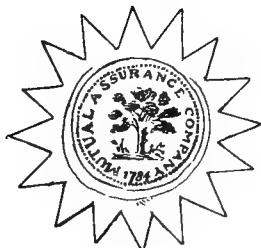
Pounds, at the End of three months next after the said Mocty shall be burnt down or demolished by or by Reason or Means of Fire, and in like Manner shall pay the Sum of three hundred Pounds so often as any Mocty of the same Value and Goodness, built in the Room thereof, shall be burnt down or demolished by Reason or Means of Fire, during the Time this Policy remains in Force, and thereupon to indorse each and every such Payment on this present Policy. AND ALSO, That We the Trustees aforesaid do hereby further order, direct and appoint, that when and so often as the said Mocty built in the Room thereof, shall happen to be damaged or injured by or by Means of Fire, such Damages shall be made good according to the Estimate thereof, or repaired, and put into as good Condition as the same was or were before such Fire or Fires happened. And we likewise order and direct the said Treasurer for the Time being of the said Assurance Company, at the End of the said Term of Seven Years, to repay unto the said Archibald McCall his Executors, Administrators, or Assigns, the said Money so deposited as aforesaid, or so much thereof as shall not in the mean Time be applied towards Losses and the unavoidable Expence of the said Insurance Office, pursuant to the said Deed of Settlement.

PROVIDED, and it is hereby declared and agreed, That if the said Deposit Money shall not be demanded at this Insurance Office within the Space of One Year next after the Expiration of the said Term of Seven Years, then the Payment thereof shall cease, and the same shall be sunk and remain to the Benefit of the said Assurance Company.

PROVIDED ALSO, That if it should so happen, that the whole Stock of the said Assurance Company should ever be insufficient fully to pay and discharge all the Losses sustained by the Members of this Assurance Company, in such Case a just Average shall be made, and the Payment to be demanded in Virtue of this Policy shall be a Dividend of the said Stock, in Proportion to the Sum insured, agreeable to the Tenor and true Intent of the said Deed of Settlement.

IN WITNESS whereof, We have hereunto set our Hands, and caused the Seal of the said Assurance Company to be affixed, this fourteenth Day of December in the Year of our Lord One Thousand Seven Hundred and nineteen

William Johnson
John Karghal
George Meredith



nearly every line or phrase in the standard policy is the result of a court decision. One word in the lines quoted above will serve as an illustration of this fact. It states that "the following described property *while* located." The word "while" is rather new. It did not appear in earlier policies and was only introduced shortly before the standard policy was adopted. It came into the policy as a result of court decisions in a far western state.

A carriage was insured, the description stating at the time the insurance was taken out that it was in a barn. When the fire occurred and the carriage was destroyed it was not in a barn but in a wheel-wright's some miles away from the barn. The company denied liability on the ground that they had insured this carriage while in the barn. The court ruled that the description of the location of the property, in this case a carriage, in the policy was not a warranty or a limit as to the place where the carriage should be insured, but was merely a statement as to the location of the carriage at the time the insurance was taken out. There were two or three other decisions along the same line, and as a result the word "while" was put in the policies, thus absolutely limiting and fixing the spot, so to speak, in which the insured property must be located in order to be covered by the policy. This, of course, will not apply to a so-called floating policy, but there uncertainty as to location is expressly provided for and the company knows the risk it is assuming.

One other word in the lines quoted is of more than passing interest, and that is the word "noon." The policy runs from noon to noon. There is a difference between the local time of a locality and the standard time which governs nearly all ordinary business engagements today. It is evident that if the local time is fifteen minutes slower than the standard time and a fire occurs between twelve o'clock standard time and twelve o'clock local time that there might arise a difference as to the insurance. The insurance on the property might only be taken out to take effect on the day a fire occurred or some poli-

cies might be expiring and others taking effect at twelve o'clock on that day. In two states this has occurred. The court decided that local time was referred to in the policy. Had the standard time been accepted by the courts as the time referred to the insurance would not have been effective. There is one state, Massachusetts, that expressly fixes the noon question by statute, that is, in the state of Massachusetts noon means standard time.

Lines Nos. 1 to 10 limit the liability of the company to the actual cash value at the time the loss occurs, and provide a method for ascertaining the cash value. These lines deal more with the questions which may arise in loss settlements and as loss settlements are treated in another chapter in this work, no extended reference is here necessary.

Lines 11 to 30, inclusive, illustrate a method adopted whereby permission may be secured for certain things which the underwriter may be willing to grant but desires to have positive knowledge that he is granting it. The prohibited things, and which things, if done without permission, void the policy, may be briefly summarized as follows: If there is any other contract of insurance; if it be a manufacturing establishment and operated later than ten o'clock; if the hazard be increased without notification to the company; if mechanics are employed more than fifteen days at any one time; if the interest is not unconditional and sole ownership; if the insured property be a building standing on ground not owned in fee simple by the insured; if it be personal property and covered by a chattel mortgage; if foreclosure proceedings are commenced and notice given of sale; if any change in the title take place other than by death of the insured; if the policy be assigned before a loss without consent of company; if illuminating gas be generated within or adjacent to the property; if benzine, etc., be kept, used or allowed on the premises; if the building be vacant or unoccupied for ten days.

Any of these things which are prohibited may be per-

mitted, in a great many cases without any charge, in some others with a charge. Take the first one dealing with any other contract of insurance. This is a very old provision of the fire insurance policy and is for the express purpose of avoiding over insurance. It is a fairly safe statement that in these days when small lines are the rule, that this permission is generally granted as a matter of form. It is claimed by some that with the co-insurance clause requiring a fixed amount of insurance to value, no permission for other insurance is necessary. It is doubtful if this is true.

As illustrating some of the difficulties which attend dealing with a contract having a fixed form, such as the standard policy, the case of permission for electricity may be cited. This form of light and power was unknown in its practical aspect, when the standard policy was adopted. With its growth it was found to be necessary to have express privilege therefore in the contract of insurance. It was ruled by the Attorney General of the state of New York that a privilege could not be granted in the standard policy for a thing which was not referred to in the standard policy itself. In other words, it was decided that the use of electricity, like benzine, other insurance and the other items mentioned must first be prohibited without permission, and then permission could be granted for its use. This it was decided was the legal way to "whip the devil about the stump."

Lines 31 to 35 note those losses arising from certain acts for which the company is not liable. Any invasion, insurrection, theft, neglect of the insured to care for the property after a fire, explosion unless fire ensues and then for the fire loss only, loss by lightning unless liability is specifically assumed therefor.

Lines 36 and 37 provide that the insurance ceases if the building falls. This is based on an exceedingly simple principle, namely that the company insures the completed structure and not a mass of rubbish or debris, and when the building falls, that is what it is.

Line 38 forbids the company to assume liability for loss to accounts, bills, currency, deeds, evidences of debt, money, notes and securities. In other words, it is illegal to insure these things, the difficulty of checking a loss claim on any of them being so great that the law wisely forbids any assumption of liability therefor.

Lines 39, 40 and part of 41 state that certain things unless mentioned specifically are not covered, such as awnings, patterns, etc., the latter especially, being far more susceptible to damage than the general run of property; if the company is to insure them it wishes the specific knowledge that it is doing so.

The remainder of line 41 and lines 42, 43 and 44 provide that there is no liability beyond the actual value destroyed for a loss occasioned by any city ordinance. It simply means that if a frame building is burned and the law requires that a fire proof building shall be erected in that section of the city, the damages collectible are limited to the cash value of the frame structure, not the structure that must be erected under the city ordinances.

Lines 45 and 46 provide that if an application, plan, survey or description is mentioned it becomes a part of the contract.

Lines 47 and 48 that no person unless authorized in writing shall be deemed the agent of the company.

Lines 49 and 50 cover the question of renewal of the contract.

Lines 51 to 55 provide a method for canceling the policy. The average contract, of course, is not subject to cancellation. A life insurance policy cannot be canceled by the company if the premiums are paid. A fire insurance policy may be canceled by either the insured or the insurer. If by the insured, it may be done at any moment by surrendering the policy; if by the insurer it may be done on five days' notice.

Lines 56 to 59 deal with the mortgage interest on the property. It is sufficient to state that the mortgagee is

not held to that degree of responsibility for variances from the contract which bind the insured.

Lines 60 to 66 make a rather cumbersome provision for taking care of property which during a fire has been removed to a place of safety. It provides in effect that a sufficient amount of insurance to protect the removed property shall cover for five days in the new location.

Lines 67 to 107 deal entirely with loss settlements.

Lines 108 and 109 define the word "insured" as meaning the legal representative and "loss" as the equivalent of loss or damage.

Lines 110, 111 and 112, treat of certain provisions which apply to mutual companies, while 113 to 116 stipulate that the policy is accepted subject to the conditions which have been set forth before.

Finally, 117 to 120 inclusive, merely furnish the spaces for signature and countersigning, with the fitting language for that purpose.

Certain standard clauses may be attached to the policy if agreed to by the insured and insurer. The principal clause is the one dealing with questions of co-insurance or average where provision is made for insurance equaling a certain percentage of the value of the property. The State, in effect, says, "You may make this a part of your contract, but if you do, you must use the language we provide."

In addition to the above clauses the practice is well developed of attaching to the policy certain warranties, the effect of which is to call upon the insured to warrant that certain things shall be done or certain devices maintained. These special warranties have their justification in the fact that a reduced rate of insurance is generally allowed therefor, or the rate at which the policy is issued, to state it differently, is based on the carrying of the warranties.

The most common one possibly is the warranty that a building shall be occupied for dwelling purposes only,

which is, of course, the most common type of risk in the world. All things mentioned thus far are practically provided by the State except the warranties last referred to, and these are not numerous.

The description of the property insured, which description is commonly called a " form " may be prepared by the company, the insured or the insured's representative. Briefly summarized it will do the following: give exact location of the risk; correct name of the insured; state the property covered; furnish a description making it absolutely clear as to what is insured; contain a notation as to the clauses to be added.

The form must be in harmony with the standard policy. It cannot exceed the powers granted by the State under the standard policy. The majority of the forms contain too many words. The general tendency is to overuse words. It is unnecessary and ought to be discontinued. A short, clear, general statement is better than a long multiplicity of phrases and sentences whose interpretation would call for a supreme court decision.

It might be well to note that under the principle of interpreting the ambiguous language of a contract against the party who drafted it, on the simple principle that, as the party might have used clear language and did not, it should be construed against him; a form which is furnished by a company will be construed against the company; one furnished by the insured against the insured, while one furnished by a broker representing the insured, will also be construed against the insured. The broker is the insured's representative, or is the insured in that case.

The standard policy, dry as it may seem, is one of the most interesting of human documents. It represents the evolution of a business contract, beginning with 1667, when the first fire policies were put forth, down to the present moment. It is an instance of the ability of man to work out through succeeding ages a document so comprehensive and satisfying that in a record covering

the settlement of some 15,000 cases, but 15 cases were not settled outside of the courts. To have produced a document capable of performing its work with that slight degree of friction is a tribute to the genius of man.

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CHAPTER V

PREMIUM RATES

BY HAROLD M. HESS

FIRE insurance is a business, not a charitable institution. The capital and the man engaged in it seek a proper return for their services. Without adequate income business cannot live. Fire insurance obtains its income for the most part from the *premiums* which it collects in return for its promise to indemnify an owner of property for his loss by fire.

Fire premiums are often described as in the nature of a tax, a fire insurance tax, which the various fire insurance companies are authorized to levy by virtue of the charters and licenses issued to them by the several states. This tax is paid by all property owners who carry fire insurance and is simply a method of distributing the loss of one among a great many. If fire insurance serves individuals in this manner, it also serves entire communities at times of community disaster. At the time of the San Francisco catastrophe fire insurance literally poured into that city millions of dollars gathered from all parts of the world. These funds simply passed through the strong boxes of the fire companies, who in turn immediately began the slow process of replacement by assessing their stockholders and increasing their rates. The replacement of these funds was imperative in order that they might be prepared for the next conflagration which might occur at any time.

It is impossible to realize the fate of San Francisco without her insurance money. Probably the proportion of the total fire loss paid by the fire insurance companies will never be known, and yet without this money no one familiar with the extent of that disaster believes that the

city could have recovered, except through the long slow process of growth through which she had originally passed.

Fire insurance is a legitimate business, then, entitled to a just return for its services to individuals and communities. In order properly to perform these services this return, secured principally through its premium income, must be sufficient to pay losses, expenses, taxes and a fair income upon the capital invested.

According to the reports made by licensed companies to the insurance departments of the several states, their total premiums for the year 1909 amounted to more than \$262,000,000. Statistics for recent ten-year periods show that the average loss is about 60 per cent. and the average expense about 38 per cent. of the total premiums. During 1909 the fire insurance companies licensed to do business, paid approximately \$157,000,000 of losses. Adding 20 per cent. to cover the proportion of losses paid by miscellaneous and unlicensed underwriting organizations, we find about \$190,000,000 of fire losses paid by fire insurance companies in a single year. The total losses from fire in the United States in a normal year approximate \$225,000,000. The distribution of about 84 per cent. of the total fire loss is, therefore, an estimate of the work companies have to do.

The largest single item of expense consists of agents' commissions, amounting to about 21 per cent. of the total premiums. The remaining 17 per cent. of the expense item goes to cover salaries, rent, clerk hire, etc.

These facts show the extent and disposition made of the funds obtained through premium income. With this before us we are in a better position to treat of the existing methods of figuring and securing this fund. Other factors such as taxes, unearned premium reserves and interest on capital stock and surplus have their effect upon the income and outgo of the fire insurance com-

panies, but not to an extent sufficiently radical to affect the question of premium rates.

A life insurance company, issuing ordinary life policies, is sure of a loss on each policy if the premiums are paid year by year according to the contract. The longer the policy runs or the greater the age at which the policy is taken out, the less the time which the insuring company can expect to elapse before being called upon to pay the death claim. A fire insurance company is not sure of a loss on each policy, even though the premiums are paid year by year according to the contract. At the same time the greater the danger from fire in the insured building, the greater the probability of a loss occurring.

Fire insurance, however, like other forms of insurance, is essentially a business transacted upon averages. When a fire company has done business over a large territory for a long period of time, it can figure almost to a certainty what proportion of insured buildings will burn, and also the amount of its loss in those buildings. It can depend upon its experience in this respect to the same extent that the life insurance company can figure by its mortality tables the total number of deaths that will occur at any given age.

As the business has thus grown and broadened and as the experience has become accurate enough to provide large general averages, the general character of the business has gradually evolved from a mere gambling proposition to one conducted along legitimate lines and upon reasonably safe methods.

Here, however, mention should be made of a factor that even in this day, tends to knock safe methods into the proverbial cocked hat. At just the time that fire underwriters are settling down into a feeling of security, in the belief that their past experience and the averages they have established are dependable, there comes a great city conflagration, with losses large enough to kill off some

companies, and to disable others to a degree requiring years to overcome. Hence the necessity of a surplus which the company can draw upon in times of stress, and without which the largest insurable values of the country would be without adequate protection.

In life insurance the epidemic which kills off entire communities is comparable to the conflagration in fire insurance which destroys entire cities. Life insurance could not exist had not modern sanitation banished the black death and other forms of plague which used to ravage entire continents. We have yet to suppress the conflagration.

In the United States we congregate in large cities and continue to construct our buildings of such material and so closely together as to make large conflagrations possible at any time. If fire insurance is to protect, it must protect against the conflagration, and here we find a vital condition that must be met by the industry. This brings us to the first general statement in this discussion of premium rates. The rates in all of our cities must be high enough to allow a margin of profit, sufficiently great to enable the fire companies to handle the regular run of losses, and *also* to set aside a fund not only to make good past city conflagrations but also to prepare for those of the future.

Comparing the fire insurance contract with the straight life insurance contract we find this similarity: Age increases the life rate and fire hazard increases the fire rate. Age in men and fire hazard in property are analogous in these two main branches of insurance.

It is true that the rate on a given life insurance policy does not increase as the holder grows older. This, however, is merely a matter of adjustment so figured as to permit the policyholder to pay a greater premium than is necessary in his younger and more vigorous days and to deduct such extra premium and the interest thereon

from the premiums which fall due in his old age when his earning power has decreased. This adjustment is not necessary, however, in the case of fire insurance premium rates. We find the premium approximately the same, no matter whether the policy is written this year or ten years from now, providing the physical hazard does not change.

Fire hazard, then, is the vital factor that establishes the premium rates for fire insurance. Some kinds of fire hazard can be measured and other kinds cannot. Some features of hazard are so small as to be unworthy of specific recognition. And yet rates must be made to fit all conditions and to produce the premium income necessary to carry on the business.

\$262,196,532 was collected by licensed fire insurance companies in the United States in the year 1909 as a premium for underwriting over thirty-three billion dollars of liability. The distribution of this premium income over the various states and cities, and individual risks in such way as to make each contributor pay his proper share presents a complex problem. Differing conditions must be met in different localities and in different risks.

Like other branches of insurance, fire insurance is subject to a different body of laws in each state and the business must be conducted in compliance with these laws. One state refuses to allow the underwriter to agree with the owner of the property upon a specified relation between the amount of the insurance carried and the insurable value of his property. Another state insists by law that an owner can insure his property by an amount equal to twice its value and collect from the insurance company the *total* amount of the policy in case of a loss.

Climatic conditions differ in various parts of the country to such an extent as to exert marked influence upon the hazard. One section has long periods of dry weather at certain times in the year. Another section has high

winds which carry fire from the building in which it starts to other buildings in the same block and sometimes to all buildings in the same city.

Types of building construction differ materially in various localities. Sections of the United States, like the northwest, contain large supplies of wood, and frame buildings, naturally the cheapest and easiest type of construction. In such sections entire towns are found composed almost entirely of frame buildings waiting for the proper day to testify to their tendency to change into fire, smoke and ashes. Another section may contain large deposits of a poor grade of clay, and the bricks made from it are not much more capable of withstanding fire than the lumber inside the brick walls.

In the mixed population of the United States some elements are less thrifty than others. These happy-go-lucky elements collect in towns, cities or sections and there result slipshod, fire-breeding methods.

The premium income must be secured in a manner as just as possible in spite of these conditions, and this income must be enough to justify capital. Otherwise capital will seek more profitable employment.

Unexplained by these legal restrictions imposed upon the conduct of the business by the several states, and the differences in climatic conditions, kinds of construction and characteristics of the people, the total of fire losses, even in a country as large as this, changes from year to year. Periods of abnormally high losses are followed by periods of abnormally low losses, and the time elapsing between the two extremes is often long enough to produce marked results upon the industry. During periods of high losses, the fire insurance companies are hard pressed. They call for higher rates to recoup their losses. Some companies are forced to the wall, and competition becomes less keen. At the other extreme, the companies become reckless, new companies are organized, more capital is

attracted into the business, competition increases and rates drop. The general result is a constantly changing experience accompanied by constantly changing rates which produces dissatisfaction on the part of the property owners, and adverse legislation on the part of the states.

A diagram will serve to illustrate the fluctuation of both losses and rates for the entire United States. In this diagram the upper crooked line shows the annual rate for each year from 1890 to 1909 inclusive. The upper straight line shows the average rate for this entire period of years. The lower crooked line shows the annual amount of fire loss sustained by the companies for each \$100 of insurance written for each year during the same period. The lower straight line shows the average loss for the entire period.

Study of this diagram will show how quickly the rate

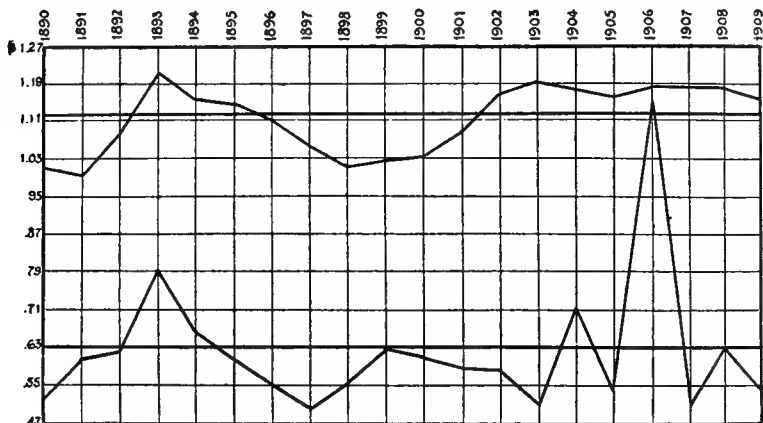


PLATE NO. 1. UNITED STATES.

This Plate shows the fluctuation of the annual burning rate or loss cost, and also of the annual rate of premium for 20 years, from 1890 to 1909, inclusive. The average burning rate or loss cost and the average rate of premium for the same period are also shown. The figures are computed for the amount of loss and the amount of premium for each \$100.00 of insurance.

Lower crooked line—annual burning rate or loss cost.
 Lower straight line—average burning rate or loss cost.
 Upper crooked line—annual rate of premium.
 Upper straight line—average rate of premium.

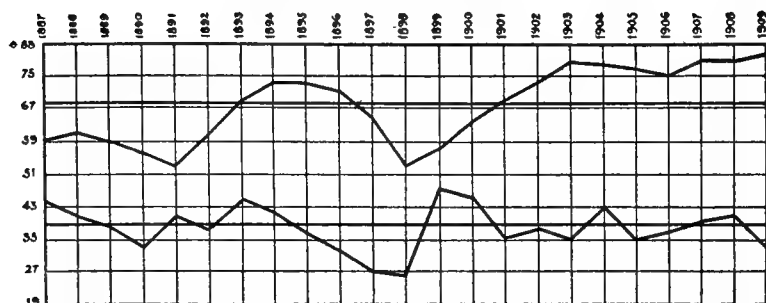


PLATE NO. 2. NEW YORK.

This Plate shows the fluctuation of the annual burning rate or loss cost, and also of the annual rate of premium for 23 years, from 1887 to 1909, inclusive. The average burning rate or loss cost and the average rate of premium for the same period are also shown. The figures are computed for the amount of loss and the amount of premium for each \$100.00 of insurance.

Lower crooked line—annual burning rate or loss cost.
 Lower straight line—average burning rate or loss cost.
 Upper crooked line—annual rate of premium.
 Upper straight line—average rate of premium.

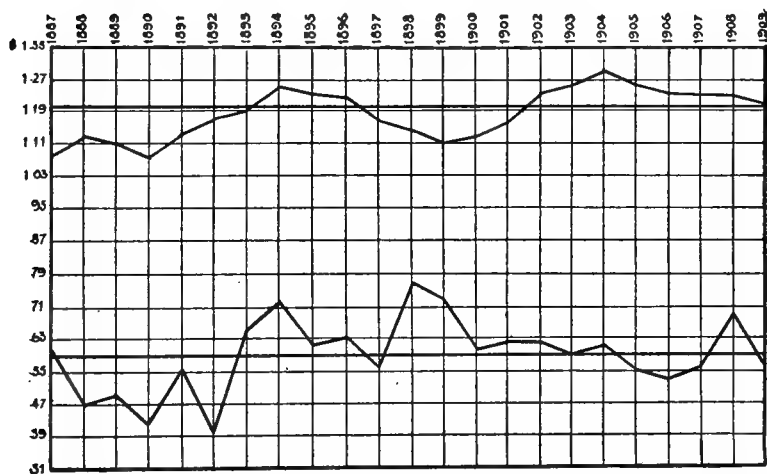


PLATE NO. 3. ILLINOIS.

This Plate shows the fluctuation of the annual burning rate or loss cost, and also of the annual rate of premium for 23 years, from 1887 to 1909, inclusive. The average burning rate or loss cost and the average rate of premium for the same period are also shown. The figures are computed for the amount of loss and the amount of premium for each \$100.00 of insurance.

Lower crooked line—annual burning rate or loss cost.
 Lower straight line—average burning rate or loss cost.
 Upper crooked line—annual rate of premium.
 Upper straight line—average rate of premium.

line has tended to follow the loss line. With losses mounting higher and higher from 1890 to 1893 the average rate followed, reaching its climax later on in the same year. Then losses decreased until in 1897 they struck the lowest mark. Rates followed and reached the bottom the following year. The fluctuations caused by the Baltimore fire in 1904 and the San Francisco fire in 1906 are painfully evident. Similar diagrams are also shown for the states of New York and Illinois.

Hidden forces are always at work affecting the fire loss of the country. The natural competition of the business forces the average rate to follow. As a result fire insurance actuaries have found it necessary to construct rating schedules flexible enough to provide for this changing rate, and schedules have been put into use throughout a considerable part of the country which make it possible to change rates up or down without affecting the relations existing between the rates of the various buildings.

The conditions described, while vital in their effect on premium rates and duly recognized by fire insurance actuaries, and the companies themselves, have only to do with conditions not immediately connected with the risk or building itself. They are at the same time often indefinite and not easily analyzed. It has become customary, therefore, to recognize them as in a class by themselves, and as distinguished from those features of the individual risk which require attention.

These individual features of a building which affect the fire hazard are much more definite and tangible than those we have been discussing. They naturally group themselves under four main divisions; i. e., hazards affected by Construction, Occupancy, Protection and Exposure. A recognition of these features makes necessary a careful inspection of the building and its occupancy from the roof to the lowest basement inside and out, together with an inspection of all buildings surrounding it close

enough to be considered an exposure; also an investigation of the interior and exterior means of fire protection both public and private. With the exception of dwellings, practically all risks in the United States must be given an inspection in order that a specific rate may be established for each building and its contents in accordance with the hazards found. This involves an immense amount of labor and money. Large numbers of inspectors are constantly busy at this work. Men, technically educated in hydraulic and electrical engineering, chemists and other experts are at work investigating and formulating standards for waterworks, building construction, electric installations and all the various features of, in and about buildings and their occupancies, which in any way affect the fire hazard. Raters are engaged in the work of reviewing the results of these investigations, tests and inspections, and in the formulation and application to individual risks of rating schedules which will give proper recognition to these various features of hazard, both good and bad.

Under the head of Construction we find that fire hazard is affected by the height and area of a building, the construction of its walls, roof, ceilings, skylights, openings through floors, partitions, floors, chimneys, exterior attachments and additions.

Under the head of Occupancy we find fire hazard first affected by the combustibility of the contents, ranging from merchandise of low combustibility, such as hardware, leather, hides, etc., up to merchandise that burns with great intensity or substances that give off inflammable or explosive vapors at ordinary weather temperatures, such as matches, celluloid goods, gasoline, etc. Again under the hazards of occupancy we must recognize the *causes* of fires as found in Occupancy. These include all the causative hazards incident to: (1) places used for the sale of goods, where the causative hazard incident to

traffic either wholesale or retail must be recognized; (2) places of abode, such as apartment houses, boarding houses, hotels, club buildings and lodging houses; (3) places where people gather together for recreation or other purpose, such as club and lodge rooms, churches, billiard saloons, bowling alleys, armories, schools and public halls; (4) places where goods are manufactured or assembled. The last class covers all industrial risks, where the causative hazards are found in the raw material or finished product, the labor employed, and the heat producing or utilizing devices, such as motive power devices, furnaces, dry rooms, forges, etc. It follows naturally, of course, that the hazards of all these causative features increase with the combustibility of the contents.

Lastly, under the head of Occupancy, we find fire hazard is affected by the damageability of the goods in case of fire. This damage may result not only from fire, but also from heat, smoke, water, change of temperature, breakage, soilure, theft, etc. Measured in this manner various kinds of merchandise are found ranging from that of lowest damageability, such as rubber stocks, wool, canned goods, etc., up to the highest damageability, found in such stocks as millinery, florists' stocks, high-grade art stocks, etc.

After Construction and Occupancy we must consider Fire Protection, both public and private. Public fire protection consists in the means of fighting fire provided by the taxpayers of a community such as (1) waterworks, if any, including pumping station with its pumps and boilers, reservoir or standpipes, cisterns, water mains, gate valves and hydrants; (2) the fire department, including equipment of fire engines, hook and ladder trucks, hose wagons, hose, number of firemen fully paid, part paid and volunteer, and fire alarm system, either telegraph, telephone or fire bell or whistle; (3) ordinances relative to fire prevention and protection, such as

building, electrical and general ordinances, and width, paving and grade of streets. A combination or lack of any or all of these means of fire protection results in various grades of municipal protection ranging from the small town without any protection up to the large city with full equipment, including in some cases even separate sets of high pressure mains, used only for fire protection purposes. The location of each building with reference to these various means of public fire protection must also be considered, such as its distance from fire department houses, hydrants, etc.

Private fire protection covers the numerous devices provided individually by the owner of the building or manufacturing plant. These may consist, as in the case of many large factories located beyond the reach of public fire protection, of a full system of waterworks, including pumps and boilers, mains, yard hydrants, private hose, private fire alarm and private fire department organization. In the case of individual buildings, private fire protection takes the shape of less costly devices some of which are frequently installed as an aid to the public fire department, such as inside standpipes and hose, outside fire escapes and standpipes, automatic fire alarm systems, chemical extinguishers or casks and pails of water and watchmen with watch clock or watchmen reporting to central station.

The most perfect means of private fire protection, perhaps, at least when properly installed and properly supervised after its installation, is the automatic sprinkler equipment, consisting of a system of pipes running to all parts of the building terminating in a sprinkler so constructed and arranged that fire in any part of the building fuses a soft metal in the sprinkler and the water is sprinkled at the origin of the fire. Such a system as this needs expert installation and supervision, but in such cases provides for buildings and occupancies the

most complete and adequate means of extinguishing fire inside of the building.

The liability of fire extending beyond the bounds of the building in which it starts to other buildings constitutes that element of fire hazard, which underwriters call Exposure. Possibly one-third of all fire loss is the result of this hazard. Every city conflagration is due directly to it. Premium rates must necessarily, therefore, recognize it.

In dealing with the Exposure hazard, premium rates recognize the hazard from the exposing building as a unit in itself, and also the danger of fire in a building beyond igniting the exposing building, and the exposing building in turn doing damage to the exposed building. How probable such an event is, depends not only upon the hazards of the exposing buildings as represented by *their* construction, occupancy and protection, but also upon the distance between exposing and exposed buildings, the construction of the exposing and exposed walls, particularly, if brick, whether with or without openings, and if with openings whether or not adequately protected with wired glass windows or fire shutters, and also upon the efficiency of public fire protection in extinguishing a fire in the exposing buildings before it breaks its bounds.

With the treatment of Exposure hazard, this tedious catalogue of the hazards of the building itself and its immediate surroundings, is complete. A hurried account such as this has both its disadvantages and advantages. A mere catalogue of factors has a tendency to confuse and tire, while on the other hand it provides a bird's-eye view of the numerous factors of hazard which fire insurance companies through their actuaries and schedules are attempting to classify and measure. Such a catalogue seems necessary, however, in order to lead up to two or three vital questions just now very much discussed, which concern the general public as seriously, if

not more so, than they concern the fire companies themselves, and which are directly affected by fire rates.

By no means the least of the many phases of the Gospel of Conservation to which the government, and the people of the United States are so assiduously and properly paying heed, is that covered by the words *Fire Waste*. Men are coming to realize that \$225,000,000 absolutely destroyed by fire each year¹ and \$240,000,000 spent each year for fire protection and expenses of underwriting constitute a drain that a country of even our great resources cannot stand. Men of serious minds are asking why the per capita fire loss of the United States is \$2.33 while in Europe it is only 33 cents. Much has been written and said upon this subject. The government has published a pamphlet which gives valuable information, not from the standpoint nor based upon the testimony of fire underwriters, but upon actual figures compiled by the government itself.

The most tangible link between the fire companies and fire waste lies in the premium rates as figured and published under existing methods. The preceding list shows the many-sidedness of the problem of measurement. Premium rates are figured by schedules which attempt to cover every feature of hazard by a charge or credit so adequately that the final result, namely, the individual rate upon each building or contents, will name in dollars and cents the aggregate hazard of that building or contents. In such a case it is self-evident that each risk makes its own rate depending upon its hazards. If each risk makes its own rate, each risk can *lower* its own rate by a decrease in hazard, by removing a defect, or by installing a protective device. We find this actually done. Property owners are continually making improvements merely as a business proposition, finding in a great many cases that the decrease in

¹ From Bulletin 418, United States Geological Survey.

premiums more than pays the cost of the improvement. Premium rates offer, therefore, an inducement for decrease in fire hazard, and thus directly cause resulting decrease in fire waste, in cases where the individual or the community does not realize the danger, and even if realizing it, is indifferent and careless about its removal.

One illustration will suffice. Much stress is laid upon fire departments and adequate waterworks, but adequate building codes and ordinances covering regulation of gasoline, naphtha, etc., are either lacking, or, if found, are placed in the hands of corruptible politicians for enforcement. In some of our large cities men are allowed to build even hotels of flimsy construction and without adequate interior protection, and then to invite men, women and children to become "guests" in a trap of death. Again, every fire insurance inspector has had the experience of going through a building where gasoline was handled so carelessly that he was thankful to escape alive, and almost horror stricken at the dangers to life permitted under city ordinances and factory management. Premium rates, if properly made and insisted upon by the fire insurance companies, take cognizance of such extreme cases, resulting in rates so high that the building owner cannot afford to take out insurance, or forcing change in construction or management, until a reasonable degree of safety for life as well as property is attained.

Premium rates as a powerful factor in the diminution of fire waste, are receiving recognition from the governments of the various states. Up to within the last three or four years these states have regarded the publication of fire rates as evidence of the existence of a fire insurance trust. The very word rate signified combination. As a result many states have done all in their power to prevent the fire insurance companies from making or enforcing rates. The result has been a minimizing of the

powerful influence against fire waste possible of development through the application of schedules. Rates have been made to "get the business" instead of to measure the hazard. Or if by chance they have been properly made, the very companies that have paid for their making have dishonored them to get the business. What has been the result? The large insurer, the man with influence and "pull," the man who knows, secures a rate lower than is warranted by the hazard of his risk. But the small property holder pays his fire insurance tax because he cannot do otherwise, and the man who can least afford it goes down into his pocket, not only to pay for fire losses upon risks similar to his, but also to pay part of the losses occurring upon the "big" man's property.

It is the story of discrimination that has been going on since the world began. The fire insurance companies are not to blame. They have been forced by competition to follow this course. The chairman of the government Interstate Commerce Commission has truly said: "It is out of the question to have the presence of competition and the absence of discrimination."

Naturally, premium rates that measure the hazard cannot "discriminate." The people seem suddenly to have awakened to this simple truth, and the first signs are seen of a tendency to compel the fire insurance companies to figure their premium rates upon impartially constructed schedules, and to *collect* the rates so figured. As to what means, if any, shall be provided to prevent the companies from making all rates too high, is another matter which we cannot discuss now. We are concerned only with this new movement to prevent discrimination and to utilize rates as a potent factor for the decrease in fire waste. Texas makes the sad mistake of requiring the filing of only *maximum* rates, which will do nothing to prevent discrimination and to decrease fire waste. Rather, in the words of the Illinois Fire Insurance Com-

mission, appointed by the governor of the state, and reporting to the 47th General Assembly of the state of Illinois, "Let the insurance companies establish rates upon all classes of risks by schedules producing uniformity and, after such rates are fixed, collect them from all persons, upon all property in all parts of the state." This commission recommended a law to this effect.

Even as hurried a treatment of fire rates as this would be deficient without some mention of the data, if any, upon which schedules for making rates, are prepared. What this data shall be, how prepared and how used is a question bothering not only property owners and state officials, but the fire insurance companies themselves. By what data do the companies figure the relations between the charges for various features of hazard?

The custom has long prevailed among companies to keep detailed records of a great number of so-called "classes." These records show the amount of insurance written, the premiums received and losses paid for each "class." For this purpose all risks were placed in groups defined principally by the kind of *occupancy* in the building, that is whether used for a mercantile occupancy, a church, a hay barn or a machine shop. In the majority of cases all risks of each such occupancy are thrown into the same class, regardless of construction, protection or exposure, and regardless of the fact, which is more often true than not, that any one or all of the factors of construction, protection and exposure have more to do with such a *classification of hazards* than occupancy has. I say "classification of hazards," because, if this classification is to be of any use at all to the fire insurance actuary, it must be a classification of hazards. Obviously, then, such a classification as the companies have been compiling for many years is worthless as a basis upon which to figure premium rates.

The fire insurance actuary vitally needs a classification

of risks according to their hazards, and there is none. The detailed schedules used today are composed of many charges and credits that apply to the same hazards in the same way wherever found. But these charges and credits are not based upon any actual experience figures, which will prove that they are properly adjusted to each other. Nor is it possible to keep such an experience. A tabulation of all losses due to exposing fire will not tell how much more to charge for an exposure from a frame building than from a brick building. In exposure alone, one of our schedules gives eighty-eight combinations of construction in exposing and exposed buildings, which shows in an instant how absurd and impossible would be the attempt to justify these charges by the actual figures of experience.

Many illustrations showing the impossibility of thus establishing these individual charges could be given. In fact, there is scarcely a charge or credit in the schedules to which this statement would not apply. What, then, is the basis upon which these charges are established?

The rating schedules as published today have been gradually developed through a period of years. As they have been applied, they have been tested. The results they have produced have been closely scrutinized by underwriters doing business under pressure of keen competition. If the results in certain instances have been too high, the companies have not hesitated to criticize the charges producing these results, and in case the criticism was not heeded, have proceeded to "cut the rate." In other cases where results have appeared too low, the companies again have criticized and if the criticism was not heeded have called for a higher rate or refused to insure the risk. By a close study of these conditions in the open market of insurance, the schedule maker has attempted to make his charges and credits conform to the general

opinion of underwriters concerning the extent of the hazard involved in the case of each.

Such a method has produced results. It has gradually evolved schedules that measure the hazard. These schedules are being applied more and more uniformly to all kinds of risks and each property owner receives the same treatment as all other property owners with same or similar hazards. There is no discrimination. And after all, a property owner is more concerned, as a rule, in the comparison of his rate with his competitor's than he is in his own rate as an independent proposition.

In spite of the immeasurable benefits resulting from this system, there exists a belief in the minds of some underwriters and actuaries, that sooner or later it will be advisable to justify the general equity of these charges by actual figures. As already pointed out, it is absolutely impossible to secure any statistics upon each separate feature of hazard. Some attempt, however, should be made to determine in a general way the equity of the results now obtained. This attempt should be different from the previous classifications by the name of the occupancy. Possibly, as has already been suggested, it should classify according to the amount of hazard contained in the risk as expressed by the rate. It would be comparatively simple thus to define a number of classes, and keep individual records upon each class. The result would be to establish by statistical figures the general correctness or incorrectness of the present methods, which although tested and tried "as with fire," have not the benefit of these statistics. The adoption of such a classification, however, should be based primarily upon the fact that the rates used in classifying the various risks are all made by a uniform and equitable schedule applied to all in a uniform manner. Otherwise the results obtained would be comparatively useless.

Rapid strides have been made in the actuarial side of

fire insurance in the last few years. The fire companies, property owners and states are realizing the large power for good latent in fire rates properly made and enforced. The future development and use of this power depends upon the co-operation of these three contending factions along mutually beneficial lines. The power is there. It is only partly used. It will eventually be developed as it should be.

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CHAPTER VI

SETTLEMENT OF LOSSES

BY WILLIS O. ROBB

UNDER the head of preliminary considerations may be grouped certain condensed propositions bearing on the fire insurance policy that every adjuster must be presumed to have in the back of his head. They apply specifically to the New York standard form of policy, now in use in a large majority of the states, but in a general way they are true also of other forms, as of that used in Massachusetts and Maine.

A fire insurance policy is a conditional promise (policy, from Latin *polliceor*, I promise) to pay the amount of, or otherwise to make good, the whole or a portion of any fire loss, not exceeding the face amount of the policy, which the insured may suffer on certain named property during a stipulated term. It is what is called a unilateral—one-sided—contract, in that only one of the parties signs it, the other accepting it subject to its conditions. The indemnity it affords is not general and unrestricted, but carefully specified, limited and conditioned. Its elements may be said to be the parties, the hazards, the conditions, the property, the amount, the term and the premium. It may be a complete written or printed, or written and printed, instrument, duly signed and delivered, or it may be a mere “ binder ” or condensed memorandum of an agreement to issue and accept such a complete instrument, or it may be only a verbal understanding to the same effect. It is a contract as soon as the minds of the parties—the insurer, the insured, and sometimes the payee—meet upon it; and as the hazards and conditions are for the most part determined by the printed form of policy prescribed by law, the meeting of

minds need only include, usually, the property, the amount, the term, and the rate or premium, to be complete. A policy contract so made can be unmade in one of three ways—by expiration, by cancellation, or by forfeiture. A fire insurance policy practically always expires at noon on a day named. A verbal or written undertaking to renew it is as valid as a verbal or written binder for new insurance. If a fire breaks out in insured property just before noon of the day of expiration of the policy the whole of the loss that results is covered thereunder, even though most of the damage actually occurs after the hour of noon. Cancellation can be made immediately on notice by the insured or five days after notice by the company; and the unearned premium must in either case be paid back on surrender of the policy, the company retaining, as earned, a somewhat larger proportion of the premium when cancellation is made by the insured than when made at its own instance. In New York the actual return of the unearned premium is held by the courts to be necessary before the cancellation becomes effective, but the federal courts and most state courts hold otherwise. The causes operating to produce forfeiture of a fire insurance policy are (1) concealment or misrepresentation, usually at the time of procuring the insurance, or fraud, usually at or after the time when a fire occurs; (2) unpermitted other insurance, occupancy, vacancy, increase of hazard, defect of title, change in title, interest or possession, chattel mortgage, foreclosure proceedings, assignment of policy, keeping, using, or allowing certain hazardous substances, and (3) breach of any attached or endorsed warranties, such as those requiring maintenance of an automatic sprinkler equipment or a watching system, or limiting the number of families in a building insured as a dwelling, etc. As to all the foregoing grounds of forfeiture, the payee, if protected by the provisions of a “standard mortgage clause,” may be

unaffected in his right of recovery by any act or neglect of the insured, provided he pays any premium the insured fails to pay, and notifies the company of any change of title or increase of hazard that comes to his knowledge; and the company, on paying to him any loss for which no liability to the insured exists, acquires an interest in any mortgage or other security held by the payee, to the extent of such payment. The payee under an ordinary "loss payable" clause has no such independent right of recovery, in most of the states, but stands or falls with the insured. Because of the considerable number of possible grounds of forfeiture and the fact that action taken for the company in an adjustment with knowledge of the existence of any such ground in the particular case may constitute a waiver of the forfeiture, it is customary in such cases to take a "non-waiver" agreement before proceeding with the adjustment.

The hazards insured against under a fire insurance policy are those of direct fire damage, including damage from smoke and heat caused by fire, breakage and other damage caused by firemen or others in *bona fide* efforts to put out a fire, and damage and expense incurred in removing insured property when endangered by fire. Lightning loss is also commonly covered by a special rider attached to the policy. A fire must be what is called a "hostile" fire, i. e., unusual, destructive, and out of its ordinary place, for its results to come under the protection of the policy. The damage done by a smoking lamp chimney, or an overheated stove, or an unstopped pipe-hole that allows smoke to escape from the chimney, is not covered. Fire losses caused by riot or by the order of any civil authority are also excluded, and losses by theft during or after a fire; also any increase of loss due to neglect at that time, or to interruption of business or the operation of any ordinance regulating the repair of

buildings. When explosion causes a fire the fire loss but not the explosion loss is covered.

As to the property insured, certain kinds of property—accounts, bills, currency, deeds, evidences of debt, money, notes and securities—are not insurable at all, while other kinds are not deemed to be covered under general terms, but only when specifically mentioned—awnings, bullion, casts, curiosities, drawings, dies, implements, jewels, manuscripts, medals, patterns, pictures, scientific apparatus, signs, store or office furniture or fixtures, sculpture, tools, or property held on storage or for repairs. These latter classes are either so easily damaged, or of an insurable value so difficult to measure, that the company must be specially on notice of their inclusion; that is, either the identical terms here used, or others at least equally specific, must occur in the policy form. Except for these two groups of property classes, any kind of real or personal property which can be damaged by fire may be insured, whether described in specific or general terms. But there are many chances of trouble in the adjustment of losses from the use in policies of inaccurate or vague language in describing, defining or locating the insured property. The general rule of law is that doubtful language in a contract shall be construed most strongly against that one of the parties who prepared the wording of it. That rule may work both ways in fire insurance, and it also may not work at all; since a portion of the language of a policy is likely to be that of the company and another portion that of the insured or his broker, while the printed conditions of the policy, in a state where a standard form is prescribed by law, are worded neither by the company nor the insured, but by the state. Generally speaking, excessive detail in the wording of a fire insurance policy form is unwise, because of the legal maxim that “to include is to exclude;” *i. e.*, the evident attempt to make a full list of articles covered raises a

presumption against any that may be found to have been omitted. The safer practice is to use only general descriptive terms, supplemented by the specific names of articles not insurable under general terms (see page 84) and of any articles known to be present and not readily classified under the general terms used.

In addition to, or instead of, covering the direct loss of the owner or responsible custodian of any kind of property, a company may insure against such loss, due to fire, as can happen to one because of his interest in the leasehold, rental income, use and occupancy, profits, or improvements of the property. For the most part policies covering such interests contain special and carefully prepared directions for fixing the amount of loss in any case, the general determining factor being the extent and duration of the interruption of income or use suffered.

Duties and Obligations of the Insured

Upon the happening of a fire loss to insured property it is the duty of the insured to give immediate written notice to the company, protect the property from further damage, separate and put in order the damaged and undamaged personal property, and make an inventory of same containing details as to quantity, cost and claimed damage. Usually at that point the adjuster arrives and the adjustment proceeds between the parties, but the policy contemplates the completion of the insured's formal claim by the submission of sworn proof of loss within sixty days. Whether made before, during or after the adjustment as to the amount of loss, such sworn proof should contain a statement of the insured's knowledge and belief as to the time and origin of the fire, the interest of the insured and of all others in the property, the cash value of each item thereof and of the amount of loss thereon, all incumbrances thereon, all other insurance, whether valid or not, covering any of said property, and a

copy of all descriptions and schedules in all policies, any changes in the title, use, occupation, location, possession or exposures of the property since the issuing of the policy, and by whom and how any insured building was occupied at time of fire. If requested by the company, there must be added to this proof verified plans and specifications of any building, fixtures or machinery destroyed or damaged, and a certificate of the nearest disinterested magistrate or notary public as to the amount and honesty of the loss. Moreover, the insured must thereafter hold himself in readiness, when required, to exhibit any remains of the property, to submit to an examination under oath, and to produce for examination books of account, bills and other vouchers and allow copies and extracts to be made from them.

Ascertainment of Value and Loss

Ordinarily, the company adjuster's first duty is to inquire into the loss, his second to examine all the policies involved, and his third to make sure that the utmost endeavors are being or have been made to protect the damaged property from further loss. However, the order of urgency of these three duties varies with circumstances. The loss must be scrutinized, and all available evidence and witnesses examined, as to its probable cause, as to any features bearing on the hazard or other underwriting problems, and as to any suspicious indications. The policies must be examined to ascertain their exact scope, and to determine whether any non-concurrences among them will require special separations of value and damage figures to be maintained during the adjustment; and they must also be studied in the light of the known facts of the loss and the risk, to see if any questions of validity or liability are involved, such as would suggest the taking of a non-waiver agreement before going on. As to the protection of the saved property, a prompt and sound

decision on that point is often of prime importance. An immediate sale of perishable goods, an extensive overhauling and oiling up of damaged machinery, reconditioning instructions, or perhaps only a further and better separation of property variously damaged may greatly reduce the loss that would otherwise result. Total losses and very slight losses are usually less urgent than serious damages.

The measure of value and loss fixed by the policy is flexible rather than precise: "This company shall not be liable beyond the actual cash value of the property at the time any loss or damage occurs, and the loss or damage shall be ascertained or estimated according to such actual cash value, with proper deduction for depreciation, however caused, and shall in no event exceed what it would then cost the insured to repair or replace the same with material of like kind and quality." Note that there may be said to be two different standards thus created: (1) actual cash value at the time (that is, doubtless, the instant before) the loss occurs, and (2) what it would "then" (that is, promptly after the fire) cost the insured—not the company, or anyone else—to replace. And the lower of these two standards or measures, if they happen not to be equal, must govern. In general, the insured's cost price, rather than his selling price, is the basis of the adjustment; but often, as in the case of staples like cotton or wheat, and in that of imported or manufactured products that cannot be reproduced without long delay, there is but a single standard—the local open-market price just before the fire breaks out. The allowance for depreciation from new cost applies not only to physical deterioration but to any kind of loss of value, as from changes in demand, etc.

Even if there be no dispute as to the standard applicable, there may easily be great differences of opinion between the insured and the company adjuster as

to the proper result of applying that standard to the particular case in hand, whether it be value or loss that is under consideration. Estimates from builders, machinists, or merchandise experts may be necessary, and in that case it is well to remember that there are ten experts on new value or cost to one on fire damage, even among builders. Generally, better results are obtainable by going over any such *ex parte* estimate in detail with the man who made it, before submitting it for the consideration of the claimant.

No one can qualify as a competent adjuster who cannot go over simple books of account and make up a statement of merchandise values from them, though of course there are complicated and sometimes "bedeviled" books that only an expert accountant, and one who has had some experience with the tricks of bankruptcy and arson practitioners, can straighten out. Now-a-days some small merchants and manufacturers carry over "loaded" inventories from year to year in their books, in order to influence favorably their credit rating, and the presence of these apparently regular postings is a great aid to fraud on insurance companies when fires occur, accidentally or otherwise. But this and other kinds of fraud, whether in the fire or in the preparation of the claim, are less common than many adjusters affect to believe: certainly much less than 10 per cent., and probably less than 5 per cent., of the money paid for fire insurance losses is paid on fraudulent evidence of any kind. The typical "book adjustment" of a merchandise loss consists of two operations, one to determine the probable ratio of profit on sales, and the other, with the aid of that ratio to show probable stock on hand at time of fire. The two following condensed statements, in which minor factors like freights, discounts, depreciation, etc., are left out, because assumed to have been allowed for in compiling

inventory, purchase and sales figures, will illustrate the common method of procedure:

(a) ASCERTAINMENT OF PROFIT RATIO.

Inventory, Jan. 1, 1910.....	\$20,000
Purchases, Jan. 1, 1910-Jan. 1, 1911.....	120,000
	140,000
Inventory, Jan. 1, 1911.....	25,000
Balance = Cost of mdse. sold during year.....	115,000
Sales, per Sales Book.....	\$138,000
Cost, as above.....	115,000
Gross Profits.....	23,000
=20% of Cost Value of.....	115,000, or
16 $\frac{2}{3}$ % of Sales Value of.....	138,000

(b) ASCERTAINMENT OF STOCK ON HAND

DATE OF FIRE, APRIL 1, 1911.

Inventory, Jan. 1, 1911, (as above).....	\$25,000
Purchases, per Books, Jan. 1-Apr. 1, 1911.....	35,000
	60,000
Sales, per Books, Jan. 1-Apr. 1, 1911.....	\$40,000
Less 16 $\frac{2}{3}$ % Profits, as estimated above.....	6,666.67
Cost of goods sold.....	33,333.33
Net value stock on hand, Apr. 1, 1911.....	\$26,666.67

It is manifest that the profit ratio here used is only approximate, being based on previous experience, not on ascertained advance of selling over cost prices during the actual period since the last inventory, which few books are so kept as to show. It is, therefore, clear that as the ratio of sales since last inventory to probable amount of stock destroyed by fire increases, the trustworthiness of the result diminishes, since an error in estimating the profit ratio applied to a large volume of sales may be multiplied in its effect upon a comparatively small result of stock on hand. If the volume of sales to be dealt with since the last inventory is five times as great as the

ordinary stock on hand, an error of 2 per cent. in estimating profits produces an error of 10 per cent. in the final result. This is one of several reasons why "book statements" are sometimes of small value and always to be handled with caution.

Sometimes a stock subject to serious and generally distributed damage is by agreement sold "for account of the loss," and the proceeds turned over either to the insured before, or to the companies after, final payment of the loss. Consent to this course by the companies must be unanimous, and it naturally waives the right to have the stock appraised. Some concerns make a business of reconditioning and selling damaged stocks, being known as salvage wreckers.

When all efforts to settle a loss by agreement or agreed methods have failed, and whether formal proof of loss has been filed or not, the policy provision for an appraisal is usually invoked by one party or the other. This is a provision for the appointment of one "competent and disinterested" appraiser by the insured and of another by the insurer, the selection by these two appraisers of an umpire to decide matters of difference, and the making of a joint appraisal of value and damage which, if embodied in a written award signed by two of the three appraisers, will be binding on both parties. This provision applies alike to total and to partial losses, and being limited to matters of value and damage and exclusive of all questions of liability and construction, is upheld by the courts, though earlier and broader provisions of the same kind were often annulled as tending to oust the courts of their jurisdiction. The appraisers are not bound by legal rules of evidence, but may largely determine for themselves what testimony they will seek in addition to their own presumably expert knowledge of the subject. The appraisal provision, by its very existence, and whether invoked or not, has greatly tended to

prevent litigation, so that now-a-days suits are not entered, for any cause whatever, in one-fifth of 1 per cent., of the loss adjustments that occur in the United States.

Limitations on Liability for Ascertained Loss

After the adjustment as to value and loss has been completed, whether by agreement or by appraisal, the amount for which the company—or each company, if several are involved—is liable must be ascertained by reference to certain limitation clauses, one or more of which will usually be present, though not always operative. The first of these is the Pro Rata or Contribution Clause, which in the standard policy reads as follows: “ This company shall not be liable under this policy for a greater proportion of any loss on the described property * * * than the amount hereby insured shall bear to the whole insurance, whether valid or not, or by solvent or insolvent insurers, covering such property.” If the policies are divided into items or divisions, with separate amounts covering on separate classes of property, the apportionment of loss on each class will be in the ratio of the several amounts of insurance on such separate class, not necessarily in the ratio of the full or face amounts of the policies. If all policies are alike in their descriptions and divisions (if any) of the property, they are said to be concurrent, and the apportionment is comparatively simple. If one policy or policy item covers a broader range of property than another, and if the damage is wholly on the property both cover, the apportionment is in the ratio of their amounts; if the loss is wholly on the property covered only by the policy or policy item of broader scope, there is no contribution or apportionment, that one policy or item paying the whole loss; while if both classes of property are involved, the policy or policy item of broader scope first pays the loss it covers alone, and with its remainder (if any) contributes with the

other to pay the loss both cover. So, if one covers in a single or blanket item, and for one undivided sum, property of Classes A and B, and the other similarly covers Classes B and C, the former pays first the loss on A, and the latter the loss on C, and then both pay their common loss on B in the ratio of their remainders. All these are varieties of simple non-concurrence. But if one policy covers A, another B, and a third A and B jointly, both classes of property being involved in loss, we have double or compound non-concurrence, and the method—the order and extent—of the third policy's contribution with the other two to pay the two losses varies with circumstances, and indeed has been variously prescribed by different state courts of last resort under identical conditions. In general, that method will be preferred which gives the insured the fullest indemnity, if all methods will not result alike in that respect. The “not valid” insurance which can be included in the apportionment to reduce any company's contribution is only that which the insured has by his own action invalidated since its issue, but which has not been declared void, or canceled, before the fire. And the insurance “by insolvent insurers” which can be similarly counted in would not include the policy of a company that has gone into a receiver's hands, since under general laws such action cancels all outstanding policies.

The other common form of limitation clause is the co-insurance clause, sometimes called the average clause, or the reduced rate clause. It provides that the company shall not be liable for any greater proportion of any loss than the amount its policy or policy item constitutes of 80 (or 100) per centum of the value of the insured property. Its object is to make the relation between value and insurance fairly stable, so that rates can be adjusted in the light of the ascertained probability of the respective occurrence of slight and serious losses, and on the as-

sumption that partial losses to the property will also be only partial losses to the insurance. This clause does not operate to reduce the insured's recovery if either the loss or the insurance equals or exceeds the named percentage of value. It is applied, if at all, after any apportionment under the contribution clause has been completed.

Options of the Company

After its measure of liability in money has been ascertained the company has three options: it can pay its share of the loss, in money, within sixty days after the completion of the proof of loss (inclusive of the filing of an award, if an appraisal has been held), or it can rebuild or repair or replace the property "within a reasonable time," on giving notice of that intention within thirty days from the filing of proofs—a method of settlement that may waive limitations of co-insurance, depreciation, etc., and that requires co-operation among all insurers—or, finally, it may pay, by itself or jointly with other insurers, the adjusted "sound value" (*i. e.*, the "actual cash" value) of the property, and take what remains of it to be disposed of for its own account. In the immense majority of cases the first of these three methods is followed.

The Adjuster

The foregoing outline of the subject of fire loss adjustments would not be complete without at least a mention of the equipment and qualities that should go to the making of an adjuster. First, as to specific training: An adjuster should be able to estimate the cost of plain brick or frame buildings, both generally and in detail, and have a good acquaintance with the prices and the behavior under fire and water damage of the common kinds of destructible property—household furniture and wearing apparel, ordinary machinery, including shafting, pulleys,

belting, etc., and a wide range of merchandise and manufacturing stocks. He should be a fairly good accountant and bookkeeper. He should know the insurance contract thoroughly—its printed conditions, its common forms, riders, clauses, permits, etc. His acquaintance with insurance law should be so good that no lawyer's opinion on any purely insurance question will have any weight with him unless accompanied by the reasoning or the precedents on which it rests. And especially he should know where to seek the information he himself does not possess on any or all of these subjects—the men, the books, the places, that can tell him what he needs to know.

But over and above these kinds of specific knowledge, he must have general qualifications of a rather unusual kind. He should be flexible, and adaptable to all companies and environments, ready and pleasing in speech and in writing, without offensive self-conceit, resourceful in emergencies, tactful, absolutely honest in every hair and fibre of him, thoroughly fair-minded, and of a personality so strong and cultivated and winning that he will have created in advance a presumption in favor of any course he may advocate. One who has all these gifts and acquirements will almost certainly succeed as an adjuster—or in any other station in life!

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CHAPTER VII

HOME OFFICE MANAGEMENT

BY WILLIAM J. MACKAY

THE internal operations or the office work of a fire insurance company necessitates a corps of experienced and accurate employees as the subjects involved in each fire insurance policy call for a vast amount of detail before it is finally viséed and passed to the files. A portion of the clerical work, however, is of the dull routine order such as recording, while other portions of the system require keen perception and judgment. That this may be more fully understood and appreciated we will take as an example the yearly premium income of one company and endeavor to show how the same is winnowed and culled in order to eradicate as far as possible all undesirable risks.

The premium aggregates, we will say, \$5,300,000 and is derived from 264,903 policies. This will show an average premium of \$20 on each policy, although hundreds of the policies issued carry a premium of only \$2 or \$3 each and much the same labor is required putting through the small premium entry as in the case of a large one. An analysis would demonstrate that the cost of labor would in many instances amount to more than the premium involved, so that the risk is being carried practically without compensation to the company. The average company, however, accepts as a matter of expediency such small income bearing policies, particularly if the risk appears to be otherwise desirable. One cannot expect the owner of a small property to pay two or three times the rate paid by his more fortunate neighbor who has more valuable realty or chattels so located that the hazard is no greater. Then again, the agent is insistent upon the

company carrying the small lines as well as the large and more desirable offerings.

The policies are written by the agents who are scattered throughout the territory in which the company operates and may number, say 5,000. When the agent writes a policy he reports it to the company on what is known as a daily report, which is a transcript of the written portion of the policy. It is these daily reports upon which practically all the work centers. They have to be recorded at least three times and are subject to the scrutiny of seven or eight other employees. They do not all meet with the same fate. Some are caught while passing through one of the channels, an objectionable moral or physical feature having developed, and the policy is ordered canceled. Others are held at various stages for further information and placed in suspense.

All agents are supplied with stationery, including large and small envelopes addressed to the company. A quantity of the envelopes have an imprint on the upper left hand corner reading "Daily Report," in which daily reports and canceled policies are usually enclosed to the company. The person sorting the mail in the company's office places the envelopes so designated upon the desk of the mail clerk, and he stamps the date of receipt on each daily report, endorsement or canceled policy and the latter are passed over to the employee whose duty it is to make the cancellation entries on the records and the live daily reports are turned over to the employees having charge of the abstract books. The mail clerk also copies and mails the letters, an electrically operated stamp attaching machine being used to facilitate the work.

The Abstracts

Here, for the time being, the number of policy only is entered upon the books under the head of the respective agency. This is to show that the report has been received and is in the office.

The reports are then passed along to the map clerks, who count up the number of daily reports, foot the amount insured and the amount of premium and the aggregates are entered in a memorandum book kept for the purpose and which shows the comparisons with the corresponding date of the previous year. The map clerks sort the daily reports, reserving those which are to be recorded upon the maps, and turn the balance over to the recorders, who make the necessary entries upon the cards, which take in all risks not shown upon maps, which will be explained later.

The fire insurance maps are an expensive but necessary requisite in any well organized fire insurance office. The prices range from \$5 for a pamphleted map of say four pages to \$50 for a bound volume of 100 pages and it requires thousands of such maps to equip a company that is doing business in each state of the Union. Agents as a rule have copies of the maps from which they give the company the location, there being a space for that purpose on each daily report. There are three leading fire insurance map publishing companies in the United States and Canada which control such publications. As a rule the plans are confined to the most important areas of the cities and large villages. Generally places having a population of less than 500 are not surveyed.

The map clerk records on the maps the policy number, the amount at risk, the date of expiration and subject insured, viz.: building, stock, machinery or furniture and fixtures, as the case may be. The daily report is then initialed by the clerk and when in the opinion of the map clerk the liability is becoming congested or is assuming unusual proportions, the subject is called to the attention of the underwriter having charge of the locality and if in his judgment the liability is excessive, he reinsures the excessive portion or asks for the cancellation of the poli-

cies, in order to bring the liability down to conservative proportions.

In case of reinsurance where a company has a treaty contract the entry is made upon the daily report of the reinsured company and the daily is passed along to the reinsurance clerk from which point we will follow its course later on. In the absence of a treaty the reinsurance is usually arranged by correspondence with a friendly competitor. At this point it might be well to say that the result in all kinds of insurance is based upon the law of average and this applies very forcibly to fire insurance and the aim of a conservative fire insurance company is to scatter its liability as much as possible, restricting it in the congested centers of the large cities to an amount that in the event of a conflagration will not wipe out its surplus, and furthermore, it is not advisable to have the liability bunched in any one block or series of blocks of buildings. It is in guarding against such contingencies that the fire maps come into play and enable the underwriter to see at a glance how the liability is distributed.

The manufacturing hazards are also shown upon the maps and while the plans show the fire doors, or absence of same, at communicating points and also the location of boilers and various other features, there is, nevertheless, not sufficient information to enable the underwriter to adequately judge the hazard. In that event he turns for relief to the special agent or field man with the request for a personal inspection and survey of the risk, or it may be that the company has availed itself of the services of a surveying bureau, some of such bureaus being of a private nature, while others are maintained by subscriptions from a certain number of companies comprising the bureau. Such bureaus employ competent surveyors, quite a proportion of whom are graduates of the technical schools and versed in electrical and chemical

hazards as well as hydraulics and various other mechanical features including automatic sprinkler equipments. These special features are fully considered and the surveys give the data as to the public and private protection, the administration, processes, estimated value subject to one fire, and various other details which enable the underwriter to fairly judge of the risk. The surveys are usually accompanied by sketches showing the elevation and floor plan of the risk. Each survey or series of surveys (the bureaus re-survey as far as practicable the principal special hazards at stated intervals) are enclosed in especially made envelopes, each carrying a serial number, and they are filed in a case designed for the purpose, each envelope being placed in an upright position and filed in consecutive order, the numbers appearing upon the upper right hand corner. The number on each risk so surveyed is also recorded on the respective risk as shown on the fire map, so that in turning up the map for a given special hazard, it is to be seen that there is a survey of the risk, viz.: No. —, and it takes but a moment to draw out the survey and obtain the desired information, so that with the maps and the surveys a company has a fairly good knowledge of the risk. This enables the underwriter to base his calculations as to the desirability of the risk for insurance and the amount which his company can safely hazard upon it, although as the daily report progresses certain features may develop which will justify the cancellation of the policy, so that its approval at one point may not always signify that it will be accepted.

Companies have learned by experience that certain classes of risks are uniformly unprofitable, due in many instances to the nature of the hazard. Then again, there are certain kinds of risks on which the loss ratio is high and there are not enough of the kind in existence to enable the company to obtain an average.

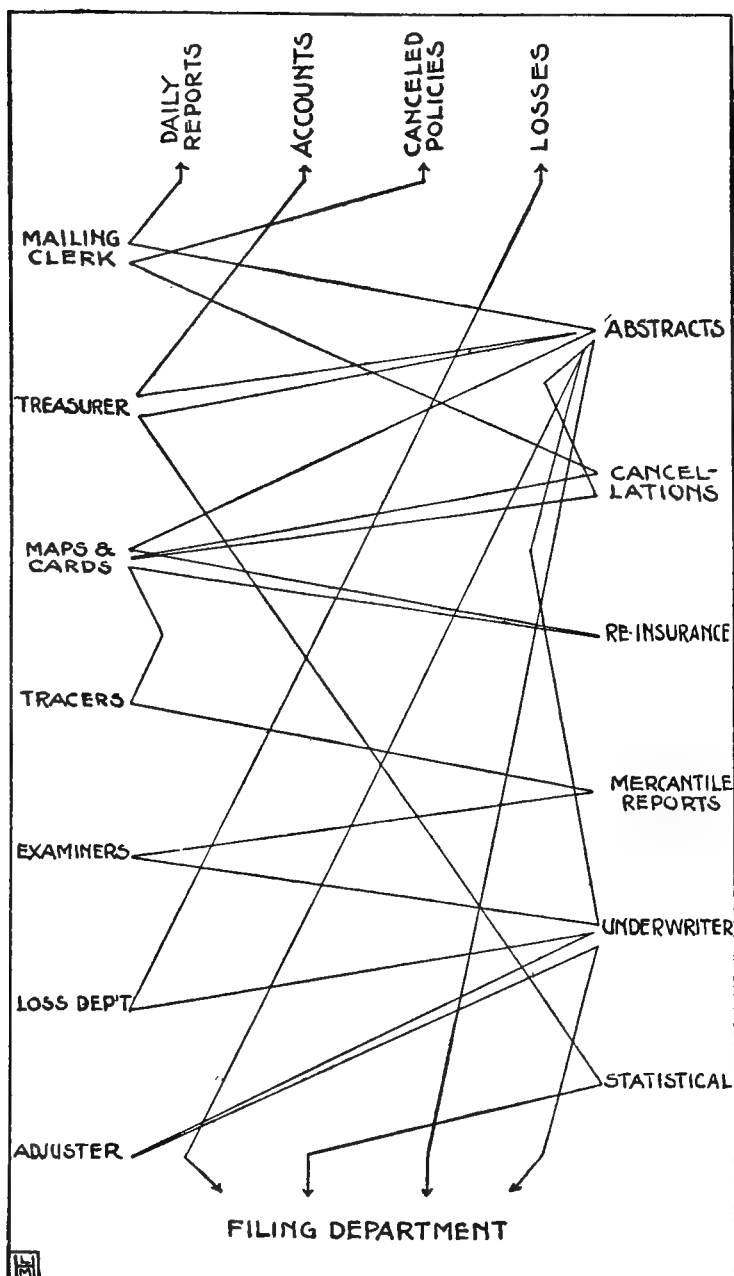


CHART SHOWING ROUTINE OF A FIRE INSURANCE COMPANY'S HOME OFFICE

The undesirable risks are listed upon sheets under the caption " Prohibited Classes " and each agent is furnished with a copy for his guidance.

The location cards previously referred to are arranged alphabetically by states and location for the following information :

Township, county and state, the name of assured policy number, amount insured, rate, expiration, reinsurance, remarks.

The daily reports are entered accordingly. Under the head of " Remarks " the name of the street or other definite location information as shown by the report is recorded.

The main object of this system is to keep track of the liability of the company in the unprotected villages. When it develops that a number of risks are on, say the north side of Main street in the village of Blank, the agent is requested to furnish a diagram or information as to the proximity of one risk to the others, or the special agent is furnished with inspection slips of the several risks on said street, as well as any others which the company may have in the village. The slips are returned to the company after the special agent has made his inspections and his recommendation or opinion is noted upon the slips and in the event of congestion of liability the special agent either requests the agent to cancel certain policies or he recommends the company to do so.

The cards are also an aid in locating a risk. For instance, the morning paper says that the Central Hotel owned by William Jones at Calamityville, N. Y., was destroyed by fire the previous day. A reference is made to the cards for New York state and if it be found that there is not a card for Calamityville, it is conclusive evidence that the company has no liability in the village. If, on the other hand, there is a card for said village, a search for the name of William Jones, or the Central

Hotel, under the head of "Remarks" will reveal whether the company is or is not upon the risk.

From the maps and cards the daily reports go to the "tracers," where the first consideration is to sort the dailies into two lots, viz.: new risks and renewals. The latter are easily identified as the reports state that the current number is a continuation or a renewal of number so and so. The filing clerks take the current daily reports of the renewals as received and draw from the files the reports of the policies of the previous term and attach them to the corresponding current dailies; that is to say, the old and the new daily in each case are pinned together. The tracers then transfer from the old report to the new all memoranda, correspondence and inspection slips though some companies prefer to keep all such data in special files and refer to same by card system. This we believe entails more labor. If the amount insured the previous year was greater or less, or if there has been a change in the rate, or form, or a reference was made as to the limit of the line, such notations are carried to the new daily. The report is initialed by the tracer.

If the risk appears to be a new one, a reference is made to the maps or the cards to ascertain if the company was previously interested in the risk so as to disclose any pertinent information, providing it is on file. In this manner the available data is assembled and the reports of policies covering manufacturing or mercantile hazards are submitted to the clerk having charge of the Dun and Bradstreet registers, from which the rating symbols are transferred to the reports, and in certain cases special mercantile reports are obtained and the reports when received are attached to the respective daily reports and where found satisfactory, the mercantile report is initialed by the underwriter having jurisdiction. Frequently the mercantile reports are of such a nature as to occasion correspondence with the agent and the subject

is either disposed of by approval or the cancellation of the policy. The fire record of the assured is then looked up and the daily reports pass to the "examiners."

An important stage in the passage of the reports is now reached, but before taking up the work of the examiners it is well to throw a little light on various features which have a bearing upon the subject.

In the first place there are various organizations which promulgate rates, supervise forms and methods under which the policies must be written and reported to the companies. Many of the forms and riders are printed and the verbiage varies according to locality or state, for it must be understood that many of the states as well as the underwriting associations prescribe rules and riders, which, while of the same purport, are differently arranged or worded. This means that hundreds of different forms for attachment to the policies are in use. There are restrictions for the storage or use of volatile oils and explosives; for the storage of automobiles; for vacancy or unoccupancy of buildings; electrical installations; fireworks; blanket or floating policies; distribution and co-insurance clauses, etc.

There is also an organization known as the Underwriters Laboratories under control of the National Board of Fire Underwriters, with headquarters in Chicago, housed in a fireproof building thoroughly equipped with all necessary and up-to-date testing apparatus and manned by a corps of experts in all lines of mechanics, chemistry and electrical principles. If the manufacturer of an acetylene gas machine, a gasolene motor, lamp or other lighting system, or of a floor oil or sweeping compound, incubator or brooder, fire door or shutter, pipe covering or roofing, wants the stamp of approval of the Underwriters Laboratories or the company insuring property in which such devices are in use, such device must first be submitted to the Underwriters Laboratories

where it receives thorough test as to its safety. If defects are discovered, the manufacturer is informed and where it can be shown how the defects may be remedied, that information is transmitted to the manufacturer and until all weak points or dangerous features have been eliminated the device is non-approved. There are neither state laws nor state officials whose duty it is to regulate or to prohibit the installation or use of dangerous devices and were it not for the rigid tests and investigations of these laboratories the loss of life and property would be much greater. The fire insurance companies are largely instrumental for this benefit to the public. Each and every device or article that has been tested or examined by the laboratories is recorded upon cards, which approximate 5,000 in number. They are arranged in files alphabetically by kind of hazard and device such as acetylene gas generators, gasoline engines, electrical insulations and switches, etc. They are then sub-divided alphabetically by maker's name for ready reference, the cards bearing approved or non-approved notation. Where not approved, the reason is given.

All this has a bearing upon the work of the examiners, for it is their duty to read each policy form to see that it conforms to rules and usages; also to see that the permits or riders are within the law of the state in which the policy is written; or that the permit for any of the devices referred to has the approval or non-approval of the Underwriters Laboratories; that the rate is correct and the premium computed correctly; that the risk is not in a section which has been tabooed by the special agent; or that the policy is not written upon property in the territory of another agent. In fact, there are so many features to be considered in this connection that the above merely serves as an example to show that experience and familiarity with the various forms and rules are essential in obtaining satisfactory and expeditious results.

When any discrepancies, errors, omissions or evasions are discovered the daily reports are handed to the official having charge of the respective territory and he communicates with the agent and the report goes into suspense until satisfied.

The examiners in some offices classify each risk, while with other companies the work is done by the map clerks or other employees. An office whose examiners do this work, which is at times of a complicated nature, will be considered later.

Unfortunately, all companies do not keep a uniform classification and too much stress cannot be put upon the importance of this branch of the work or the information to be derived therefrom. The classification is the indicator or guide for the profit and loss account and without it the company is laboring in the dark, as each class is credited with the premiums and debited with the losses and the total result is assembled at the close of the year and a balance struck with each class.

A classification might be so finely drawn out that its efficiency would be weakened or it would become too cumbersome and expensive. For instance, some companies may have 400 classes, discriminating between brick and frame buildings and contents of same and whether inside or outside of fire department protection. This would mean eight sub-divisions requiring 1,600 captions in the record book, while another company may have but 200 classes and not discriminate between protection and no protection. Then again, some companies classify risks which are equipped with automatic sprinklers separately. And so it may vary according to the custom or fancy of the company. The classification should be arranged so as to be useful and afford fair satisfaction without necessitating a large clerical force, which means a heavier expense in operating the system. In compiling the classification many specific risks justify a class by themselves,

while others are so similar in nature that they can properly be grouped under one class. It affords little satisfaction to provide a class for industries which are few in number, such as watch or clock factories, sewing machine factories or typewriting machine factories, for the volume of premium received for average lines for one year on any one of the classes would be comparatively small and one loss of a few thousand dollars in say five years would show in all probability a debit balance for the class. It is, therefore, advisable to group, as we said before, several of such similar hazards under one class and average in that way. With many companies the miscellaneous class takes care of such risks that cannot properly be classed elsewhere.

A classification is probably the most difficult subject to handle intelligently and accurately. Those applying the class number are at times unfamiliar with the hazard or misconstrue it. Then again, it may be a mixture of hazards and the question naturally arises, which one predominates? The class number is entered upon the daily report in the space allotted for that purpose.

The daily report having been thoroughly examined and found correct, it is then initialed by the examiners and the reports of policies covering all classes except dwellings and furniture are submitted to the official or underwriter having jurisdiction over the respective territories and he again scrutinizes each report and where found correct initials it. Then they go back to the abstract clerks where the following entries are made upon the books (the policy number, as before stated, having been entered upon receipt of the daily report in the office): Beginning of risk; expiration of risk; amount insured; rate, premium; class number and reinsurance, if any.

The abstract books are also ruled for the cancellation of policies, columns being headed: Amount canceled; premium canceled; date canceled; return premium, and

when policies are received canceled they are entered accordingly. The monthly accounts current from every agency are checked up from the abstract books, which, furthermore, show all the business in force from the various agencies. So it can be seen that these abstracts are of value in more ways than one.

Reinsurance

A fire insurance company doing a considerable volume of business finds it necessary to reinsure its liability down to conservative proportions or average lines. It would be very inconvenient and at the same time unsafe to rely upon an effort to reinsure each risk by correspondence, so an arrangement is usually made with a company willing to assume the liability under articles of agreement which are signed by each party. The agreement naturally prescribes limitation of risk, prohibited classes, rate of commission and other details.

As previously indicated, most of the entries for reinsurance are made at the maps. The percentage of line which is to be ceded is noted in the space which is arranged for that purpose on the daily report. An imprint from a rubber dating stamp which bears the name of the reinsuring company with a space for the cession number is a convenience. The binding entry for the reinsurance should be initialed. Daily reports then pass to the reinsurance clerk who records each daily report so reinsured upon a bordereau, which is numbered and ruled for the following information: Reinsurance number; policy number; agency; place, street and number; name of assured; object and nature of risk; amount; rate; months, begins; retained for own account. This portion of the form gives the synopsis of the reinsured company's risk. Then the following entries are for that part which pertains to the reinsuring company: Date of entry; amount; premium; begins; ends. Bordereaux are mailed to the

reinsuring company as per its wishes and an account is rendered at the close of the month for all transactions.

Suspense Files

These might properly be called the infirmary for all maimed or imperfect reports quickly drift to this point and there they rest until cured, so to speak, although as a matter of fact they are called up quite frequently and subjected to more or less correspondence before being relieved from suspense. Just as soon as an error or omission is noted upon a daily report or some information is wanted as to protection or occupancy, the subject is written about and the date is noted upon the report and it is filed in its proper place, the files being arranged alphabetically by states and the reports filed in the same manner by agency. The reports are gone over at stated intervals; a week, say, is given the agent in which to reply. Failure to do so means another letter to him requesting an answer and so it goes until the company obtains the desired information or correction.

As soon as the daily report enters the suspense file it is stamped "suspense file" and that stamp remains on the report until satisfied or relieved, at which time the imprint is erased by running a pencil mark through it. The reason for this is that frequently a report in suspense is taken out for some purpose and with the suspense imprint on it there is no difficulty in its finding its way back there. For various reasons some reports are sent to the special agent and when that is done the report is charged to him on a slip which is filed until the report comes back when the slip is destroyed.

A record of all reports going into suspense or to special agents is also kept on cards arranged in the usual manner.

As we have intimated, some of the daily reports went to the suspense file from the maps or from the daily report examiners so that when they are relieved from sus-

pense they go back to the point where they were stopped and then they move along again in the usual course.

Files

There are various methods and preferences for filing daily reports. Some companies use the flat box, loose sheet system. Others have them bound in clip file book form, while others prefer the loose sheet and upright system. This, we think, is the most preferable as it takes up less room and in the end is less expensive. It is certainly most convenient.

The demand on these files is constant. Daily reports are going in and out all through the working hours of the day. The dead dailies (and by that we mean short term risks which have expired or are expiring and reports of canceled policies) are cleared from the files each month, leaving nothing but live dailies therein. The daily reports of canceled or expired policies are removed to separate filing cases.

All these files are arranged alphabetically by state, an agency space card being used between the smaller agencies, thereby saving space. It requires the services of several clerks to attend to the removal and return of the reports and where care and attention is given to the work it is seldom that mistakes are made by filing the reports improperly.

Loss Department

Agents are supplied with blank loss notices in duplicate, separated by perforation. The blank spaces are for name of agency, name of agent, policy number, amount insured, date and hour of fire, name of assured, property insured, where located, estimated amount of the whole loss, estimated amount of loss to the company, origin of fire, list of other insurance and such other data as the company may see fit to add.

When a loss occurs the agent fills in each blank and sends one of them to the company and the other to the special agent, whose address is printed on the blank reserved for his needs. The blank going to the special agent contains the form or written portion of the policy, which enables the special agent or adjuster to judge the nature of the risk. If it happens to be a stock of merchandise or something of a perishable nature, he naturally sets aside other subjects in order to give this particular loss prompt attention. If, on the other hand, it is a building and reported as a total loss, the same haste in the adjustment is not necessary. Some companies require an agent to telegraph when a loss occurs, giving policy number and amount insured and state whether partial or total; these advices to be followed by the usual form giving particulars in detail.

When the notice of loss reaches the company the daily report is drawn from the files and it will show whether there is reinsurance or not. The notice from the agent is placed in a loss envelope on the back of which is printed the following data: Loss claim number, policy, agency, assured, mortgagee, property, term, class, date of policy, expiration, date of loss, amount of policy, amount claimed, proofs received, amount paid, when paid, reinsurance, company, cession number, amount, amount collected, date collected. This printed matter is conveniently arranged and the loss clerks enter all information at hand at the time of entry. The company sends the agent and the special agent an acknowledgment of the advices, printed forms with spaces for the necessary data being used. The acknowledgment to the agent asks him to see that any property saved is properly cared for. The loss is then entered by months in the general loss book, each loss as entered receiving a claim number (these claim numbers run consecutively). The claim number is also entered on the loss envelope; the daily report is stamped

“ Loss reported (then follows the date), claim number, amount.” The claim number is then entered on the daily report and the estimated amount of loss is noted in pencil.

Where a company is handling its business through departments it is necessary to have separate record books—for instance, Pacific Department, Western Department and Eastern Department. Each one of these departments has a general loss book and state loss book. The loss notices from the departments are forwarded by the general agents upon forms which are somewhat similar to those mentioned and the entries are made in the respective general loss book of the department. Then the losses are assorted and entered in the state books. It is absolutely necessary to keep a record of all losses by state in order to fulfill the requirements of the various insurance commissioners in the annual statement.

The loss envelopes are then filed by states or department and where by department, sub-divided by states, and all correspondence or data received pending the adjustment is filed with the respective claim and when the proof of loss has been received it is stamped “ Proof received (date),” home office. After the entries on the record books as taken from the proof of loss, viz.: the amount of loss and the date proof was received, have been completed the proof of loss is filed in the loss envelope and a notation made thereon as to whether a draft has been issued or whether the agent has paid and will charge in account. In either case, the loss envelope is placed in the proper file and it remains there until the draft has been presented and paid or the agent’s account comes in and it is checked over, after which the loss envelopes are placed in permanent files.

In case of partial loss a receipt is taken and a duplicate is attached to the policy showing that the policy has been reduced in the amount paid and if it is a total loss the policy is returned and filed with the company, so that

the loss envelope is supposed to contain a complete transaction of the case up to and including the return of the policy, with signatures of all parties in interest.

In the event of reinsurance the reinsuring company is notified and proof is made on the company. In the case of a treaty company the subject of payment is handled in the monthly account and in the case of reinsurance by a non-treaty company the subject of payment is arranged by check or draft.

A monthly statement of loss estimates is prepared, arranged by department and states. This is reported to the board of directors at the monthly meeting.

The losses are also tabulated by months, showing the gross loss, reinsurance and net loss; then by states and agencies. These tabulations are kept up throughout the year, at the close of which they go to the statistical department.

A number of the states compel the companies to report upon blanks which they provide, all losses which occur in the respective states. Some of these states ask that the information be forwarded on the same date that the company receives it, while others want it sent upon receipt by the company of proof of loss. The loss clerks send such reports to the insurance commissioners of those states.

The loss clerks also send notice to the reinsuring company of losses as they occur and in due course serve proofs of loss. At the end of the year they make up a statement of all outstanding losses. This also goes to the statistical department as the data is required in preparing the annual statement.

The services of one or more clerks are required in going through the daily reports monthly, scanning each one and picking out all which are to be dropped at expiration or that are subject to correction upon renewal. Such notations are usually made on the daily report and the

clerk has instructions regarding certain classes which the company may want dropped at expiration and the agent is notified about a month in advance as to the company's wishes.

Endorsements

All policies issued by fire insurance companies are subject to change. There may be a change in the title, location or form; a mortgage may be placed on the property or the hazard, rate or amount of insurance may be increased or decreased. All such changes are noted upon the policy by the agent and he notifies the company upon an endorsement form arranged to show all necessary data. When the endorsements reach the office the date of receipt is stamped thereon. If it happens to be a case where a change in the amount of insurance or rate is involved, it goes through about the same course that a daily report goes through. If it happens to be a change in location, it goes to the maps or cards, while in the case of a change in title or if a mortgage has been placed on the property, the endorsements are looked up as may be necessary, and, when finally approved, are attached to the proper daily report, which goes back to the files.

Supply Department

It has already been noted that there are hundreds of policy forms, riders and endorsements in use. These have to be arranged by state or territory in order that they may be readily identified when needed. The supplies also include advertising matter, letters of instructions to agents, circulars, etc.—advertising signs usually remain in the hands of the manufacturers and are forwarded to agents upon order from the company. This method saves the companies storage room, labor and expense.

Applications for the agency are usually referred to the special agent having jurisdiction. He interviews the applicant in order to determine his qualifications or de-

sirability as a representative and in the case of an appointment the special agent submits his recommendation with a requisition for supplies to the company and the latter issues a certificate vesting authority in the agent to sign contracts of insurance, receive premiums and otherwise conduct the affairs of the company at the agency. The company also applies to the insurance department, in the state in which the agent is located, for a license, the company paying the fee therefor.

The requisitions are sent to the supply department and all necessary supplies, including of course the policies, which are numbered consecutively, are forwarded by express. The package contains a form which the agent is required to sign and return to the company, this being a receipt for each policy, the numbers whereof are stated in the form. All blank policies should be carefully counted and numbered before leaving the office. The established agencies require from time to time various forms, supplies and advertising matter for which they send in a requisition. These are filled in the manner as heretofore stated.

Most up-to-date companies equip the supply department with numbering machines operated by hand or electric power, wire stitching machines and electric or hand power printing presses. A record is kept of all supplies that are sent to agents.

Books of Account

While the vital principles of bookkeeping in general apply to fire insurance in common with other classes of business, the varying laws and requirements of the forty-six states of the Union necessitate a careful arrangement of accounts and the installation of supplementary data resulting not infrequently in duplication of statistics.

After many years of study, however, in an endeavor to

bring about a satisfactory segregation of accounts, the majority of the state insurance departments have adopted a uniform annual statement blank in so far as assets, liabilities, income and disbursements are concerned, and the controlling ledger accounts, journals and cash books of the company should be arranged accordingly, the modern loose leaf system admirably meeting the requirements.

As soon as possible after the close of the month every agent is required to forward to the company an account current containing a detailed record of the transactions for the month as indicated by the account blank, the details being more or less extensive, depending upon the requirements of the individual company. In general, however, the accounts embrace on the debit side, the policy numbers, amount insured and premium thereon, and on the credit side, the commissions allowed the agent and any other items authorized, together with a computation of the net balance due the company, which balance is remitted in due course in accordance with the credit terms of the home office or department.

This system obviously avoids the necessity of making a direct payment to the agent for his commissions, as he is permitted to retain his compensation out of the premiums written or collected.

This method of accounting is economical and desirable and doubtless influenced the insurance commissioners in finally adopting a few years ago an annual statement blank for fire companies based upon premiums written instead of premiums received, as formerly required, a change most desirable and in the interests of accuracy and simplicity. Each agent's account is stamped with the date of its receipt and in such a manner as to indicate whether or not it was accompanied by a remittance for the balance as computed thereon. The accounts are then audited as to footings and each premium or return premium entry checked by the abstract book or register on

which the daily reports are recorded as received. Errors or omissions are immediately called to the agent's attention before the account is entered on the journal, the latter being a simple matter of transcribing the various entries to appear under the proper headings, the totals of which are posted monthly to the general ledger accounts. Though to some extent a duplication of work, a supplementary card system arranged by agencies, containing only a record of the balance due on each account, is invaluable for correspondence purposes and for convenience in making drafts for balances due, and also serves as a check or audit in balancing agency ledgers.

A controlling account representing the total unpaid agents' balances should be carried on the general ledger, this being procured by posting the totals of the balance columns as shown in the journal and the totals of remittances received from and paid to agents as indicated by the cash book, thus showing at all times the total amount of balances unpaid.

Miscellaneous data almost without limit can also be compiled from a proper arrangement of accounts and utilized for various purposes, such as furnishing monthly to fieldmen schedules of unpaid balances by agencies and daily statements thereafter of any remittances received, thereby enabling the special agent to know at all times the exact standing of accounts; weekly or monthly sheets showing agency premiums and losses as compared with the same period in the previous year; statistics by months showing the ratio to premiums of each expense account, thereby enabling the company's officers to detect the channels through which savings are made or the cost of doing business increased; and so on ad libitum.

Reinsurance Reserve

For many years after insurance against loss by fire became an important and indispensable factor in the

business life of the community, a reinsurance reserve to be held as a liability was not required by law. The development of the business soon gave evidence, however, of the necessity of safeguarding the interests of the policyholders who obviously must pay their money in advance for protection, the contract for indemnity not being fulfilled, however, by the company until a loss by fire is adjusted and paid or the policy has expired without a loss being incurred. Laws were passed to meet the conditions, but realizing the impracticability of computing the exact unearned premium on each individual policy of many thousands, the various states adopted a practically uniform risk and premium schedule based upon averages which would permit the maintenance of a reserve fund as a liability sufficient to reinsure all of the company's outstanding risks, or in case of insolvency or liquidation, to pay each and every policyholder that portion of his premium unearned. For example: In order to procure an adequate reserve on all policies written for the term of one year it is assumed that, of say one hundred policies written during the calendar year, one-half will have been written prior to July 1st and one-half subsequent to that date. Based upon this reasoning it is apparent that at the close of the year a policy written in January of that year would have earned nearly the full premium, while a policy written in December would have earned practically none of the premium. Therefore, a fair average for unearned premiums or reserve on one year policies is assumed to be 50 per cent. and policies written for longer terms are treated on the same principle. This reserve requirement necessitates the compilation, arranged by states, of amounts written and premiums thereon, by terms and expirations, of all policies, and a like accumulation of policies canceled, reinsured and terminated. It is reasonably safe to say that very few companies follow the same method of arriving at the required

result and practical experience is the only reliable teacher. The intricacies of the reserve offer great latitude for the statistician, some preferring expiration registers, some card systems, while the original data may be procured from the daily reports or abstract books or from the accounts current, as may be deemed expedient.

*Annual Statement; Date and Returns to Insurance
Departments*

Probably the major portion of the troubles which the fire insurance company statistician is heir to can be laid to the diversified laws of the various states and the unexpected demands of the insurance departments, all of which add materially to the cost of transacting business. Under present conditions it is not only necessary to obtain for tax returns an accurate distribution of risks by states according to the location of the property insured regardless of the source from which the policy was issued, but to segregate the indirect or reinsurance premiums by companies, both authorized and unauthorized, the cancellations thereon and likewise losses paid and received. As the agents cannot always be relied upon to furnish this information pertaining to transactions through their offices, it is necessary for the company to evolve a system of identifying such items and compiling same in proper form. This necessitates the careful examination of every daily report and the stamping thereon the words " Out of State " if the risk is located other than in the state where the policy is written, and the word " Reinsurance," if the risk is one reinsuring another company.

The risks reinsured by the direct writing company in another company can be more easily ascertained as the bulk of reinsurance effected by large companies is usually through the home office or departments and under contract with so-called treaty companies. All of this data can usually be procured most conveniently by the use of

a supplementary card system arranged by states and companies and showing the amounts written and premiums thereon and any cancellations.

There has been of late a noticeable tendency towards uniformity even in taxation, the majority of the states now basing taxes upon the gross premiums after deducting cancellations and reinsurance effected in companies authorized in the state, though in some instances reinsurance effected is not allowed as a deduction. On the other hand, the varying and extreme interpretations by the insurance departments of the words "gross premiums" have resulted in two or three cases in a justification from the insurance commissioner's viewpoint—but not from the company's—of a ruling calling for the payment of taxes on the gross premiums as written in the policies without any deductions whatever, even for return premiums paid on canceled policies; a manifestly unjust procedure which results in a greater income to the state as no reduction is made in the tax rate.

It is not in the province of this article to discuss in detail the taxation of insurance companies and the foregoing allusions to the subject are merely interpolated to explain one of the causes responsible for the maintenance of an elaborate statistical department on the part of the insurance companies.

Statistical Department

This is a beehive of figures. The work consists largely of accumulating and tabulating figures pertaining to premiums, losses, reinsurance, agency expenses and taxes as indicated above. The figures are assembled by agencies and by states so as to arrive at agency profit or loss and state figures for use in preparing the annual statements. A card system is of great benefit in this work, some hundreds of thousands of cards being used annually. The various tabulating machines are also used.

The stenographic force are valuable aids in the correspondence and other detail work that naturally belong to their province.

Official Force

The duties of the company officials are so varied that it would be difficult to describe them in detail. It may be said in a general way that they have supervision and administrative powers over the affairs of the company. The president and the finance committee of the board of directors have charge of the investments. The underwriting and field work in the territory in which the company is operating is in charge of the various officials, the territory being divided usually into sections in order to equalize the labor. Correspondence and office detail constitute a goodly portion of the work, although frequently the officials have to devote a portion of their time to conferences of the various underwriting associations in which the company is a member. They are also at times called into the field to settle points which come up for administrative action.

In its very nature the business of fire insurance is a hazardous one. Conflagrations have to be met as well as disastrous fires of lesser magnitude, so that the fire underwriter is subjected at times to a severe strain and is normally at high tension. Whether it be the element of chance or the diversified problems that he is called upon to solve, or a combination of both, there is, nevertheless, a fascination about the business that holds one to it.

A very large percentage of fires appear to be needless, the chief contributory cause being negligence. There are all degrees of carelessness from slight to criminal. Fully 50 per cent. can safely be chargeable to such causes. The aggregate losses in the United States and Canada are increasing year by year in startling proportions and while our state legislative bodies vie with each other in

adopting laws inimical to the companies and the insuring public, little effort is made through legislation which will have a tendency to reduce the fire waste. The general public as well as legislative bodies do not seem to sense the fact that the public has to pay the losses and that the tax or rate of insurance can safely be reduced only by the adoption in all municipalities of building laws recommended by the National Board of Fire Underwriters, or at all events, of laws embodying up-to-date restrictions and methods, and by the appointment of state fire marshals and assistants who shall investigate all fires. Also the companies should be restrained from paying losses until they receive an order from the fire marshal to do so. In many instances there is a laxity in our police departments.

It might be possible to enumerate many other features which have a tendency to foster the fire waste. In fact, the subject is exhaustless and in an article of this kind only a brief outline of the processes is possible. To the students of the business, however, this may be sufficient to interest them in the subject and cause them to make a further examination of the management of this important phase of the business. While the United States Supreme Court decided in the celebrated *Paul vs. Virginia* case that insurance is not commerce, nevertheless, it is the handmaid of commerce and essential to all commercial transactions.

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CHAPTER VIII

AGENCY MANAGEMENT

BY WILLIAM B. MEDLICOTT

AN agency system may be either a distinct influence for good or a great power for evil, according as the features of its makeup and instruction are those of care in selection and wisdom in management or not. The potencies for good or evil in its workings are so great that in considering the question of agency organization and management, the pros and cons of the situation must each be considered if we would enhance the good and minimize the ill that may result.

The most valuable asset any fire insurance company can have is a well chosen, properly located and wisely administered agency plant. No accumulation of funds nor wisdom of underwriting management on the part of a fire insurance company can achieve the desired results without the existence of a proper organization for disposing of its policies to the public and the placing of them where at least a fair measure of profit may be secured. From whatever viewpoint we take, the fact that the agents are the men who make the money is clearly apparent, and we must not forget that no plan of agency work is feasible that overlooks the agent's duty to himself or that his first aim and object, as a company representative, is to make money for himself. Statistics clearly show that more of the fire insurance companies' money ultimately remains in the agent's pockets than in those of anyone else. The agents are sure of at least 15 per cent. of the gross income received by the companies, while no one class of customers, nor the companies, with their net retention averaging less than 5 per cent., can even approximate any such amount.

Since the agents, then, are such an all-important factor in the workings of fire insurance, it becomes the more essential that in the selection of its local representatives, a fire insurance company should use extreme care. Not only should the fire insurance agent be a good business getter, but in order that his sales of policies may bring profit to those he represents, his ability to wisely select his ventures should be always in evidence. Far more is this ability needful in fire insurance representatives, than in the case of the salesman who has ordinary merchandise to dispose of. The company, whose policies its agent sells, is usually committed before it even knows of that fact, and the ability to withhold shipments to doubtful customers that the merchant or manufacturer can exercise, is not possible for the insurance companies who are bound and delivered for the time being by the word or act of their agent or salesman.

Many fail to realize the immense trust that the appointment of an agent involves. The issuing of a policy or binder commits the company to a possible loss, that often greatly exceeds the orders that the most persuasive salesman of merchandise even dreams of, and yet with the former, the immediate delivery of the goods is a part of the daily routine.

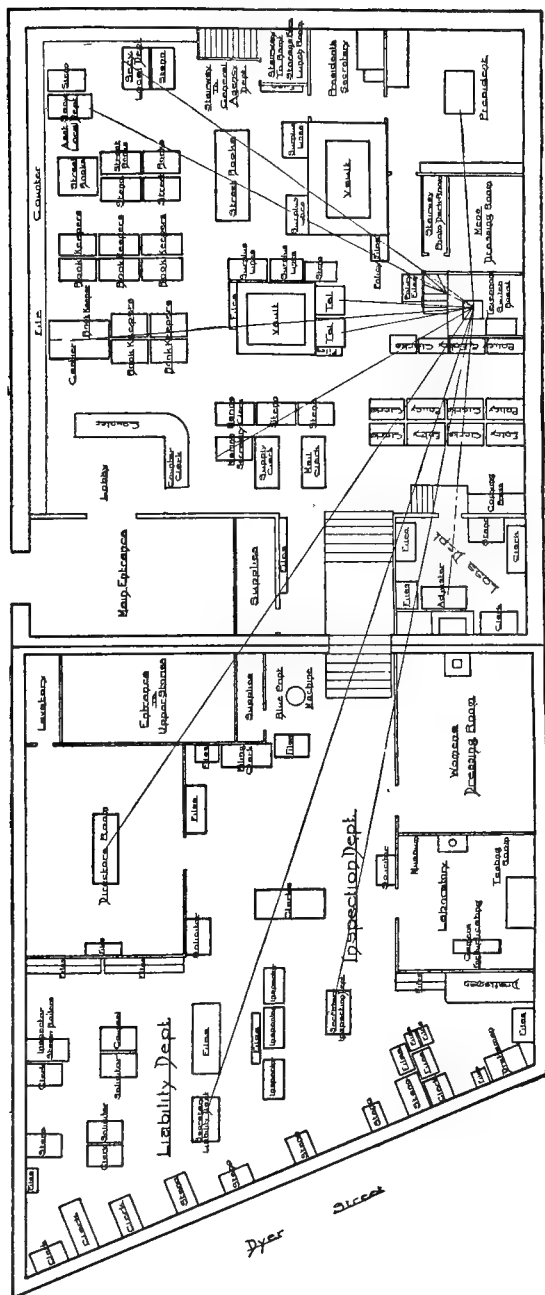
The man who can safely be entrusted with such an immense and unlimited responsibility should be selected with the greatest care and his ideals of integrity, his soundness of judgment, his popularity in his community and his business ability, should each be highly developed. The finding and appointing of such men, constitutes the primary step in agency organization, and is first spoken of because it constitutes the safe foundation of any agency plant.

In the earlier days of our institution, a fire insurance company's policies were sold directly by the company itself and the insured sought the insurer, rather than the

opposite and more aggressive methods that are followed today, both in merchandising and in fire insurance. Extension of the business called for broader, quicker and more convenient means of furnishing our all-important commodity to property owners. Merchants and bankers were appointed to place fire policies along with other articles of sale. Not only were these men the distributing medium, but they were often relied on to fix the price at which the policies should be sold, a position thus requiring added responsibility and a high grade of judgment. This system prevailed for many years and still exists to a large extent in foreign countries and colonial possessions. In thickly settled regions and in localities possessing large insurable values, where the protection of many fire insurance companies was needed, it was found that some more comprehensive method was a necessity and the result is the agency system as we know it today in our own American states. This system has been developed into a more vast and intricate machine in our own country than elsewhere and while it fulfils a needed duty, its very vastness and complexity introduce active potencies for evil as well as for good. Its extension has further required the formation of rating and inspection bureaus and kindred organizations for combined effort and economy.

The good features of the agency system are, that assuming the subject of the insurance to be deserving, he can secure protection against loss by fire, to an adequate amount at any time and pretty nearly anywhere, and at a price based on the laws of average and combined experience. When we stop to consider that to maintain the credit needed for every form of commercial enterprise or financial venture, or the preservation of that which has required years or even a lifetime of toil to acquire, and even the prevention of financial ruin, fire insurance stands essential and alone, we should realize what it means to be able to get it when and where we want it at a safe and

Custom House Street



Street

AGENCY ORGANIZATION CHART — — Starkweather & Shepley Inc. — — Local Department
 1000 Main Street, Boston, Mass.
 1000 Main Street, Boston, Mass.

equitable price, and if the agent be of the right sort, it gives the advantage that should come from an intimate knowledge of local conditions.

The evil features of the agency system are that it elevates the agent who gets the commission of a number of companies, to a more prominent place in the opinion of his community, than the companies, which must pay the loss, if it occur, a condition fraught with much danger, if the agent, for selfish ends, sells the policies of weak or unscrupulous companies. It also, through its reaching into localities remote and but little known, places the company at a disadvantage, in its inability to act promptly and avoid unwise commitments, thus giving the irresponsible agent and the vicious or careless customer an opportunity to work disaster. The potencies for ill to the community as a whole that such a condition creates we shall have occasion to speak of in more detail, but it is well to bear them in mind at this point.

* Since the success of the agency system, in its ability to increase the good and to lessen the evil, not only to the insuring company, but to the public as well, can only be secured by the appointment of a high type of men, it appears that it is not so much the system as the appointments that are often at fault. Unfortunately, the sin of avarice that in some form or other causes nearly every human short-coming, gets its work into agency appointments to an alarming extent. The instruction by companies to agents to "get premiums" is too often freed from the qualifications of "fairly, honestly and wisely" and not infrequently stands alone as a temptation to an agent, whose sole idea of underwriting is to get his commission. Such a company becomes an easy mark for the customer, who would gladly sell out through the medium of a fire and is a great comfort to the careless property owner, who will not clean up or protect his property because, "What's the use, I am insured!" With these op-

posite conditions in mind, how should a fire insurance company proceed to organize and manage an ideal agency plant? The question may be answered as follows:

1. Decide on proper agency locations.
2. Select a proper class of men for agents.
3. Properly educate its agents.
4. Work for proper rates, rules and forms for the conduct of its agents' work.
5. Be just to its agents in the way of compensation and co-operation.

The Locality

Any city or town that presents poor moral or structural conditions should never be considered as an agency center, not only for the insurance companies' own well being, but for the ultimate benefit of the community itself. This latter statement may not at first be wholly apparent, but it is none the less true. Loss by fire is an absolute waste, insurance does not replace it, it simply takes the burden from the individual loser and distributes it over the community as a whole. The people then are made to suffer for the careless and at times vicious acts of some of their citizens. They are indirectly made, through the necessarily higher rates that the companies must secure in a freely burning community, continually to pay more out of their individual pockets than would otherwise be the case. This feature renders it eminently important for a fire insurance company to avoid as an agency center a locality that is poorly built, that has low moral standards, or that by reason of poor business or climatic conditions, has become decadent. The carelessness that comes from indifference, or the desire to remove from an unprofitable or uncongenial locality, is as productive of fire loss as the vicious desires of the genuine fire-bug. The things not valued are never properly guarded. Absence of ability to insure in such places, removes temptation, arrests destruction and keeps many a would-be

seller of his property to the insurance company from the crime he might otherwise commit. It at the same time brings about a greater measure of good to a greater number of people, since it makes it more difficult to accomplish the unloading on the public of individual burdens. We are told that there are those who make a "virtue of necessity"; in this case the necessity is "cannot insure." This is one of the altruistic features of the agency location proposition, but there is an egoistic side as well. The company that will take a chance on profits in a decadent community, and thereby run an undue risk with the money of its policyholders and shareholders, is but little wiser than a parent who would bring up his family in a fever stricken, malarial community because of a beautiful view or some other equally elusive attraction. The avoidance, then, of operating in places where fire waste is habitually excessive and needless is not only a saving to the insurance companies, but is always conducive to the public weal.

On the other hand, there are many cities and towns where there are not only property values that warrant the putting down of an agency, but where the conditions of growth, prosperity and a proper sense of care and construction prevail and offer an attractive field for a fire insurance company to operate in. For best results, the insuring power represented in such a town, with respect to its insurable values, must be given due weight. There can be but little profit secured, and there must be potencies for evil created by entering a locality where there are already more insurance companies operating than can possibly be adequately fed. At the best, their income must be so small as to hardly pay for the maintenance of an agency. Then, too, such a crowded condition among the insurance companies and the unseemly strife for premiums that always results, causes undue latitude in the acceptance of undesirable properties as subjects of

insurance. Lower rates result than are needful to cover the fire cost, a depressing of the standard of agents follows, carelessness in the care of properties ensues, an increase in the fire waste of the community and a steady drift into evils that are so apparent in decadent towns, become the rule.

Competition is usually regarded as the life of trade, but in the realm of fire insurance it may become a factor for lasting injury to a community where it is over-done. If competition causes undue reduction in rate, and gives too great opportunity to insure sub-standard properties, in short, if it makes insuring too cheap and too easy, just so surely will its ill effects on the community be apparent and loss to the insurance companies become a fact.

Let us eliminate then, from further consideration, such places as are either too poor to insure in or are already too full of insurance companies, unless in the latter case, you are prepared to offer some special form of insurance that is not already over-done. Fortunately, in our growing country there are many cities and towns already existing and others are constantly being founded, where neither of the above conditions prevails and it is to such places that the attention of the insurance company seeking new agencies should be directed.

Whom to Appoint

The man who goes fishing has at the outset two propositions confronting him, first he must decide where to fish and then proceed to catch his fish. It is this last operation that we must now consider. You have decided where you will try to put down an agent, now get him, and be sure he is of the right sort. If you want salmon or trout, don't be satisfied with a cat-fish. It is not always easy to secure just what you want and many mistakes are made by the most experienced fieldmen in their search for agents. Probably, the best qualification for

the man to whom is entrusted the duty of selecting those who shall act for his company as local agents, is that of being a keen and just judge of human nature, neither too trusting nor too suspicious. Nothing is of more importance in making this selection than the constant remembrance of the great element of trust that is to be invested in the man chosen. Remember that the safeguarding of vast interests and the possibilities of working costly disasters are within his power while he holds your company's commission of authority. With this in mind, it should be apparent that great care must be exercised in the selection. If the appointee's capacity for securing premiums be great, it must not be forgotten that the possibility of heavy losses, unless proper care in selection be exercised, is also increased. An agent should be a man popular in his community and trusted by its citizens, for his position is one of confidence and trust toward them as well as toward his companies. He should be as much a student of his calling as the physician, the lawyer or the clergyman. To him, as well as to them, is entrusted the care of certain of the important possessions of his clients or customers. It should be his special province to protect them against loss of the acquirements from inheritance, business or toil, that have come to them, as much as it is the duty of the physician to care for their bodies, the lawyer to shield them from business complications and the priest to look out for the welfare of their souls. It is a position of such trust and confidence and calling for such careful administration that no man is too good or too wise to choose it as his calling. It is needless to say that the agent should be strictly honest, all men should be. Especially, though, is this virtue essential to one who is trusted with the interests of both parties to the contracts he daily negotiates.

He should be a good man of business for questions of credit, value, selection of form, rigid accounting methods,

clear system of records are continually needed. He should also be something of a lawyer in order to rightly frame and interpret policy forms, something of an engineer in order that he may advise on points of construction, something of a chemist and electrician in order that the special hazards inherent to certain processes may be understood and wisely safeguarded, in short, there is no calling where greater versatility or broader knowledge is essential. High ideals like these should not discourage. They are often realized and those longest in the business can think of many local agents who live up to all of the virtues mentioned and are regarded as wise advisers by the community with which they do business.

Simply the ability (or possibility) to get business prompts avaricious companies too frequently to place their interests in the hands of men wholly incompetent and unworthy, when the broader and more lasting features of the business are considered. This evil leads to more of the ills in our calling than perhaps any other one. It is too universal to be overlooked but to any company seeking a permanently profitable and creditable agency plant, it presents a pit-fall that they should seek to avoid.

How can men in the local field be secured who will come up to standard? Do not hold out false hopes and quasi promises of your company's unduly broad lines, do not make elusive statements of strength and unbusiness-like, over-liberal loss settlements, do not seek to impress the agent with the idea that the companies are in business for purely eleemosynary purposes. Find out if possible what the prospective agent requires and if your company is writing the class of business that he needs your assistance on, define clearly its attitude on these needs, be a good listener to his views of the local situation. He should know it, if he is the proper man, better than you do. Use tact and wisdom in meeting his questions and

arguments and let him see that the proposition is a business one for you both. Be absolutely honest in all your statements, for sooner or later the truth must come out and if he has accepted your company under misrepresentation you will become an undesirable company in his agency and the appointment one of regret.

When possible the new agent should enter an established agency, both for the benefit arising from experience and the knowledge of the locality that such an office has had opportunity to acquire and also to avoid the injury that more or less directly comes from adding to an already over-filled branch of business, thereby rendering it of less value to able men. This cannot always be done; old agencies become decadent and at times are adverse to taking in new and aggressive members. New men of proper qualifications and with good prospects seek to enter the business with the purpose of making it their permanent calling. This feature of permanence is one that is important to consider and should be an essential factor. There are those in every community of size, who, seeing the old agencies moving along easily and profitably, get it into their heads that it is just the calling they would like. They forget the probable work of years, the faithful study, the aggressive soliciting and the winning of the public confidence, that the objects of their envy have acquired, and seem to think that all that is necessary to achieve success in the insurance business is to get a company, put up a sign and let the dollars come pouring in. In any event they are not sure that they will take up the work as a permanent thing, but rather as a "try on," if it suits, "well;" if not, "drop it." No successful agent ever started out in this way. Appointees from this class are a disappointment to themselves, a nuisance in their community, a sorrow to their companies.

Whether or not agents are desirable who have at the same time other lines of business on hand, is a problem

for which no general rule can be adopted. Sometimes it is a benefit, and in any event, the agent whose income is not adequate to his method of life is an undesirable representative. Oftentimes, in the smaller communities especially, men of high ability can be chosen who are not wholly dependent on the limited income that their agency can bring them. One feature of any agency appointment should always be insisted upon and that is the ability of the appointee to finance his business. Sufficient quick capital should be his to carry the customers who cannot, and the others who do not pay promptly. If seemingly weak in this respect, it is always well to refrain from appointing, or if otherwise desirable, a bond should be secured guaranteeing the fulfillment of his service in this respect. As a general proposition, though, the man from whom you need a bond is not the man you should have as your agent.

Agency Education and Management

It is not proposed in taking up this phase of agency conduct to speak so much in a specific as in a general manner, since the methods of different companies vary materially, but there are certain broad principles that always apply, and are essential to a wise conduct of the business.

Having secured agents of the right sort in the right places, the question confronts us as to how should the representation acquired be developed to produce the best results? Any system of management that fails to recognize that the first object of the agent is to make money for himself is bound to fail. It is the agent's right to so regard it, and if he does not realize this condition and steadfastly work for it, he is of no value. The province of the company, keeping this end in view, should be to so aid and direct him that in benefitting himself he benefits his company and also gives full protection to his cus-

tomers. To achieve this should be the object of any form of agency management. In making new appointments the company should fully instruct the appointee as to its methods and requirements. There are unfortunately not a few companies that are rash enough to send commission and supplies to men of whose qualities they know practically nothing, and sometimes even to men who are entirely new to the business, and then leave their methods to their own free choice. Such a procedure invites disaster and generally attains it. Every company has its own little peculiarities in the kind of business it does and in the way it does it. This renders advice as to its methods not only important, but essential to success.

Work in the line of instructing agents devolves almost wholly on the company's field force, and it is to them that we make the suggestions that a good many years of experience in this branch of fire insurance work have brought to mind. The fieldman who considers his whole duty done when he visits an agent, buys him a cigar (or something stronger), presents candy to the feminine portion of the office force, accompanied by the usual flattering and vapid remarks, inquires after the health of the agent's family, possibly looks at random at his company's register, asks a few equally random questions, then takes out his time-table and says his train starts in fifteen minutes and he must be going, leaves about as valuable an impression as a quickly fading flower, pleasant perhaps while it lasts, but forgotten when it fades away. On the other hand, the man who by helpful suggestion presents to the agent at each visit something that is of real value and benefit to him, and who makes it his duty to see that whatever he may learn that is of value to that agency is imparted to it, is one who is kept in mind, and whose company is thought of when the good business comes in. A company sending out the type of agency guide and instructor first described soon becomes the same sort of a

business receptacle as the one that eventually receives the faded flower, namely, a waste-basket! Do not gather from this that we mean that the pleasant, friendly, social side of agency visitation is of no account, but it certainly should be secondary, and the all important duty at each visit should be that of further help to the agent and further safeguarding the interests of the company represented. Tact and diplomacy are essential in this. That the two features of the fieldman's calling can be harmonized there is no doubt for many close and lasting friendships have grown from such association, but it is between the men who have been helpful to each other along business lines, rather than those who are purely social and nothing else.

The duties of the fieldman in agency management can be summed up as follows:

Instruction of agents.

Reviews of business.

Rate adjustments.

Adjustment of loss claims.

Instruction of Agents

This with the young and inexperienced fieldman must consist mainly in acquainting the local agent with the special features of his company's methods, both as to underwriting and accounting and he should also acquaint himself with the local conditions as regards hazards, protection and business features, the quality of the risks desired, the size of lines to be carried, the objection to certain forms, the nature of correspondence, the treatment of company accounts and their requirements as to remittances, should all be made as clear as possible. As the fieldman's experience and knowledge of the situation broadens, he will find that his advice is sought on general questions affecting the business of that particular agency and of the insurance situation as a whole. If by con-

scientious and constant study the fieldman has been able to wisely inform and guide his agent, he will find that he has become a sort of oracle to him, and his opinions are sought, valued and lived up to. The local man should know more of the situation and the risk than the field representative; at other times, through inability or carelessness, perhaps, he does not, and deference to his opinions, coupled with tact and logic, must go hand in hand to accomplish the best good. The fieldman's aim in his relation to his company's local agents should be to have his methods and knowledge supplement the local man's closer acquaintance with the conditions directly affecting his own business. It is impossible to tell in a specific way how this must be done, since situations that arise are so constantly varied, but the saving grace of common sense together with courtesy, fair dealing and firmness, should be given constant exercise.

Reviews of Business

By this is meant inspection and classification. The best of local agents, particularly those representing many companies, will at times become confused as to what some one particular company does want, or the form in which it wants it. Again there are those agents who sometimes from purely honest motives, and again from try-it-on efforts, may appear to view with favor a risk that the fieldman knows will not be acceptable to his company and that to his mind (which should be in close accord with that of his company) presents an undue risk. Again the rate for some particular property may not appear adequate to the risk assumed, or the description of the property covered and the forms attached may be objectionable. All these points must be carefully gone into by the company man in his review and inspection of an agency's business for cancellation or reduction of line may be in order. Whatever he does, his reasons therefor should be

clearly given to the local man whose right it is to know the same.

Usually this inspection work is confined to a few risks at each visit, ones that for some special reason the head office examiner feels a doubt about. At times it is desirable that the entire business of an agency should be gone over and reclassified. Much should depend in a company's attitude toward any particular agency on the loss ratio it has presented and the agent's reputation for the careful handling of his business. Agents should be encouraged in the practices that will win the confidence of their companies and bring profitable results to them. To know any locality thoroughly by either company or fieldman inspection is requisite, and it is not only the company's privilege but its right to make it, since it is they who must pay the loss if it occur. The local agent who resents such inspection of his business and regards it as a reflection on his judgment is almost invariably the man who would indignantly refuse to risk a dollar of his own on some unseen article, and who would not think of buying the cheapest sort of a parcel of land without thorough title searching and deed recording. His business, too, is not infrequently of a type that such inspection shows to have been carelessly acquired.

Rate Adjustments

Another duty in agency management, that under our present system of organization at times falls to the company's fieldman, is that of rate adjustment. In the public eye, no matter what the rate charged may be, it is too high, and a natural tendency with the local agent is to sympathize with his customer and to sympathize with him mighty hard if a rate reduction will bring to him a larger slice of any particular line of business. The company then is between two opposing forces, pressure from the people, through the local agent, to re-

duce rates, and the need of keeping these rates up to a proper margin above the fire cost. The fieldman should so study the condition of the risks brought to his attention along these lines as to be able to convince the local agent of the justice of the rate objected to, if it is justifiable, and the fire cost of the class for that locality does not warrant any reduction. On the other hand, instances arise where discrimination is apparent and the conditions do not justify as high a rate as is charged. In such instances it should be the work of the fieldman (and he should have the support of his company in this) to work for a readjustment of the rate to an equitable figure to both parties. Selfish ends should be scrupulously avoided here as they inevitably react on the party seeking to attain them. Justice and the greater good, and a defensible rate should be the sole aim. Reduction made simply to enable some particular agent to effect a so-called "scoop" invariably disturbs the rate situation and brings forth an after-crop of unjustifiable demands, thereby working immense ill to the business as a whole. Care in the handling of this feature of agency management is all-essential and the recklessness which desires to get premiums has produced, leads to endless ills. To handle this feature with intelligence and justice calls for close study of all the conditions that enter into the making of rates and both firmness and open-mindedness should be exercised.

Adjustment of Losses

Up to the time of the fire the local agent has been pretty much the "whole thing," and with not a few the possibility of loss seems too remote to merit consideration. Even though the particular risk that has been destroyed may have been accepted by the company against its will, and only after the earnest pleading of the agent as an especial accommodation to him, the company at once automatically becomes responsible and must foot the bills.

When this condition of affairs is reached some local agents seem to forget that they are primarily the agents of the company and so are morally bound to protect its best interests. The best type of agent never forgets this, and will never place himself in the position of being ready to "do up" his company for the benefit of even his very best customer. Such a course creates distrust of the agent, even in the minds of those who are benefited for the time being by his lapse from just and honest service of those represented by him. To the agent having a properly balanced mind the only wise and honorable course under conditions that a loss creates, is that of truth and justice to both insurer and insured and an avoidance of anything that might compromise either. Any company fit to be represented desires to make good its honest losses and to pay no more or no less than a fair interpretation of the policy contract calls for. Sharp practices on the part of insurer, insured or agent may at times bring financial gain to one party or another, but the line of management over this feature of company outgo should be to get at the real truth and pay accordingly, and to conduct the adjustment in such manner as to make the agent sure that prompt service and courteous, just treatment will always be accorded their claimants. Lasting injury to an agency may result from a loss settlement where these elements are omitted and the resorting to methods of sharp practices and severe treatment will not only work untold ill to the agency, but will cost the company resorting to them far more in premiums than any possible saving effected in this particular loss.

The various departments of agency work depend upon certain fixed relations. There are:

First: The relation of the agent to his community.

Second: The relation of the agent to his companies.

Third: The relation of the company to its agents.

Fourth: The relation of the company to the public.

Successful management of these varied relations is one that regards them all as identical and not antagonistic, and that aims for justice to each. One of the most important axioms on which the entire fabric of fire insurance rests is that the interests of insurer and insured are mutual, so that whatever harms the one injures the other and wherever one is benefited the other profits thereby.

The Relation of the Agent to the Community

The agent should be a power for good in the community and his position is one of honor, since he is the one to whom his customers look to safeguard their interests. He should aim to be an adviser as to hazards, both moral and physical, should constantly work for better methods of construction and protection of properties, and should avoid the placing of insurance for those whose only object it is to get rid of some undesirable possession. By so doing he not only improves the city or town that he does business in, viewed from a structural and business point, but he reduces materially the load of fire waste and insurance cost on the community as a whole, and acts as a conservator of that which might otherwise become a direct loss to the community's wealth. In his dealings with his community the question of a proper amount of insurance to value should always be borne in mind and constantly looked after. It is demoralizing, both to his companies and the public, to resort to over-insurance for reasons which we have already given and it should also be his aim as a matter of special justice to his companies to see that the amount of insurance carried with respect to value of the property covered, is of sufficient amount to make the carrying of such a risk not an unduly hazardous proposition for the insuring company, and in doing this, to carry adequate indemnity for the owner of the property.

Technical knowledge on the part of a local agent is ex-

tremely valuable in dealing with questions of physical hazard and proper construction. Companies should urge upon their agents the making of a study of the features that tend to make or to reduce fire waste. The knowledge of what to do in questions of this sort is of immense value, but coupled with it should be the ability to act on this knowledge and to convince one's customers regarding these points that not only tend to reduce fire waste but indirectly to cause a reduction of the rate tax that affects the community as a whole.

Companies should urge upon their agents the necessity of clear systems of accounting so that their policy records as well as their financial dealings with their customers and their companies may be conducted along lines that win confidence. With every successful agent there must be the ever present determination to push for business and the better equipped he is, with the knowledge of the conditions affecting the varieties of hazards he has to face, as well as ability to so draft his policies as to properly guard both the insurer and insured, the better will be his chances for acquiring a business that is mutually satisfactory to all concerned. All hazards are either of the physical or moral class. The former is measurable and can be provided for in the rate; the latter cannot be measured and is, therefore, something that the agent should religiously avoid whenever he has the slightest suspicion of its existence.

Extravagance in office equipment is to be discouraged in any local agency. On the other hand, an economy that savors of parsimony is nearly as objectionable. Customers are entitled to a proper place in which to transact business that is of such importance and an ill-kept office evidences methods of carelessness. Nothing affects a customer more adversely than to have his inquiries as to his policies met with an aimless sorting over of records and an absence of quickly obtainable information.

The Relation of Agent to Company

Briefly speaking, the relation of the agent to the company is that of employee to employer, and to properly administer the trust that this relationship brings about the agent should not only seek to acquire the knowledge and the ability to exercise it that we have spoken of in his relations to his community, but he should constantly carry in mind the fact that he is not only put down as an agent to bring in premiums for his company, but to avoid needless losses for them. The obligation to properly draft his policy forms and to bear in mind his company's interests as well as those of his customers should be closely adhered to and in order that he may do this the company should see to it that there are no lapses from adherence to good practices in use of rules and forms, nor deviations from established rates that are made by a wider knowledge than it is possible for the individual agent to acquire.

Under this relationship it should be insisted on by the companies that the agent's methods of recording his risks be such that the companies can at any time gain special information which they desire regarding any particular venture. The need of this in the dealings of agent and customer we have already dwelt on. To do this requires a well equipped office, not necessarily one lavish in its appointments or large in extent, but one that shall be adequate to the volume of the business conducted. We all know that some very profitable agencies, especially in the smaller places, are carried on with the simplest sort of an office equipment, but even where this exists it is possible to have the necessary accounts clear, concise and in shape for ready reference.

It is the duty of the agent to the company to see that the portion of the premium that belongs to it by right is promptly collected and then turned over. Nothing demoralizes an agency, more or ultimately leads to

greater dissatisfaction than for a local representative to become habitually delinquent over these matters. Perhaps this condition is only exceeded as a deplorable practice, by collection from customers without remittance to companies. The remittance feature you will note enters into both these conditions, and from the company's standpoint should be rigidly enforced. It is no kindness to an agent for his company to allow him to become lax in this respect, since the longer arrearages are allowed to run the harder they become to make up.

"When in doubt tell the truth," is a well known saying of one who was a philosopher, as well as humorist, and by no class of men should it be more continually kept in mind than by local agents in their relations to their companies. The benefit of a doubt in the agent's mind over any venture should be given them, since the risk is theirs. This is spoken of because it is often overlooked and frequently causes grievous misunderstandings and regrets.

Any agent who, by his lack of conscience in this respect, or his greed for commissions, succeeds in placing with his companies risks that are beset with doubts, soon makes such companies a refuge for evil-doers with all the disaster that such a condition carries with it.

Aggressiveness with judgment should always be urged by companies on their agents; not the aggressiveness that seeks to over-insure or to shut one's eyes to over-hazardous risks in the desire to get business, but a steady push for business of the right class properly written up.

The Relation of the Company to the Agent

This relation is, perhaps, the one that an article of this sort is expected to take more directly into consideration than either of the others, and much of what has already been stated is directly along this line of relationship. Perhaps no better illustration can be found of the way in

which the dealings of company and agent should be conducted than by making use of the symbol or house plate of one of the very earliest of the fire insurance ventures; that of the "Hand-in-hand"; a symbol most significant of support, help and mutually close relations. The company and the agent should go hand in hand, and it should be the special effort of the company to see that this condition exists. Everything that can be done in the way of help or information should be promptly furnished; reasons should be given wherever it is possible for the taking of any course that affects the agent's business, and instruction on all points should be freely and readily given him.

In urging on the agent system and method, do not burden him with too much detail. System with an agent is needful and is good, just so long as the agent runs the system, but when this system become so cumbersome and elaborate that it runs the agent it fails of attaining its desired object and becomes a hindrance to the development of the business it is designed to help.

While at times, for what is termed "business expediency," it may be desirable to grant special privileges and to waive certain requirements that a company imposes, it is generally best to live pretty closely to established rules in order that the agent may know just where his company stands and how to conduct himself. Frequent deviation from this rule soon causes a company to become a "dumping ground" for sub-standard business, a condition that is sure to result in dissatisfaction all around. Clear, frank, firm correspondence from company to agent, and a reasonable attitude under all conditions will do much to avoid this.

The question of compensation is as vital in this relationship as any feature that enters into it. The more we agitate it the more difficult does its solution appear. So far as the companies are concerned an increase in com-

mission has the same effect as a reduction in the rate, since the proportion of the premium actually received by the companies, and the net amount retained by them to furnish indemnity are just so much lessened. The larger the commission paid, the larger must be the rate charged to be sure of sufficient remaining to the companies to meet fire cost and expense of operation. The public naturally objects to this and it places the companies between two opposing forces,—pressure from the agents to increase their compensation or commissions, and pressure from the public and their law-makers to reduce the cost of selling their policies. The only advice that can be given is for the companies to be as liberal to the men who get their business for them as they can afford and to pay no more than fairness to the public in its tax-rates admits of. In short, it must be left to the inevitable working of the laws of supply and demand. Agreement between companies, though, as to what it shall be is fully as essential to safety as agreement on fixed average rates. The very nature of the method of compensation (that of commission on premiums written) while an incentive to get business, creates a motive for accepting sub-standard risks and securing commission resulting from them. Our only comment on this is that it constitutes another reason why the type of men properly fitted for the agency trust should be above bribing. Other means of compensation than that of commission are not feasible to any extent in so vast an institution as the American agency system presents.

The Relation of the Company to the Public

The public inevitably regards a company as they see it reflected in the practices of its agents. It is said that agents reflect the characteristics of their companies, but none the less do the public, not knowing the personnel of the company itself, judge it by the local men whom it has appointed. The majority of the community do not think

so much of being insured in "such and such a company," as insured with "Mr. So and So," the local agent of that company. In fact, there are a great many insured who do not know what companies they are in, but simply that Mr. So and So, the local agent in their town or their broker, has written up their insurance. Consequently, the local man is elevated to a position of more prominence than the companies he represents. This renders it especially important that the company, if it is to maintain an enviable position in the eyes of the public, should use extreme care in the selection of its local representatives.

The direct dealings between company and public come up either through the rate that is charged or the amount of loss that is paid. Since the most frequently talked of instances of these two conditions are those where dissatisfaction has ensued, the public quite naturally regard the companies as being anxious to charge more than they ought to get for the risk they assume and as paying less than they ought to when a loss eventuates. Fortunately, the dissatisfied from these two causes are in a small, though at times, noisy minority, and the great majority of any community are those who are not dissatisfied with their rates and who, if they have been so unfortunate as to meet with loss, feel that they have been justly and fairly treated. It is impossible for any company to avoid at times one or the other of the grievances mentioned. The question of rate is usually out of their province to adjust, and on the question of loss, conditions will every now and then arise where dissatisfaction is inevitable and no matter what the claimant may have received he feels that it is too little, while the company, under the same conditions, is almost sure to feel that it is too much. It should be the aim of the company then, in its management of an agency, to use special care in the selection of the men who are to represent it locally, since so much depends upon

them, and they are to be in their relations to the public, barriers to financial loss and possible ruin.

As stated earlier in this article, specific instruction on the many points that may arise is impossible, and generalities such as we have tried to advise on are always unsatisfactory, but to sum up the condition as a whole, the aim of any agency organization and management should be to pick out the right places in which to do business, to choose the right man to represent the company in these places, to follow up these appointments by suitably strict requirements and constant guidance, and to endeavor to be fair to all parties with whom the company may be thrown in business contact. The primary position of any insurance company is that of bearing burdens, or, perhaps, we had better say of distributing burdens, for, after all, it is simply the money taken from the public that is held in trust to be applied at the point where some member of that public may have suffered loss. Like the administration of any trust, fair dealing should underlie the methods employed.

We are constantly hearing it said these days that "these are the most critical times in fire insurance that the institution has ever seen" and that disaster of one kind or another menaces us from all sides. It is interesting in this connection to look back and to read over addresses and reports of twenty, thirty or forty years ago, and at all of these times, it is just as clear that "the most critical period has been reached." The troubles today may not be just the same as the troubles in the years gone by, but those were just as real and seemingly overwhelming to the men of that time as are the difficulties that confront us now, and the institution still lives and plays its important part in the affairs of men. It pays to be optimistic, and that the optimism that should be a part of every fire insurance man's make-up, may have its hopes realized, it is all-important that the great

organization known as the " Agency System " should be both rightly manned and wisely administered.

Agency Commission Agreements

Premiums paid by the public to the fire insurance companies must not only be sufficient to cover the losses by fire, that is the burning cost of the business, but all other charges necessary for the conduct of the institution. The most important of these charges are for home office and field management, rating organizations, inspection bureaus, state and municipal taxes and compensation of agents. Their aggregate is between 35 and 40 per cent. of the premium income.

By far the largest of these items is that of compensation to local agents for securing the business, or as it is termed, " commissions." For many years a majority of the larger companies have been united in an effort to keep the commission cost, outside of the large cities, at the uniform figure of 15 per cent., irrespective of the class of business written. A few large companies have claimed the privilege of paying whatever they saw fit in the way of this commission or compensation to their agents and almost all the smaller companies, mainly for the sake of attracting business, have offered as an inducement higher commissions ranging from 20 per cent. upwards, and in some cases reaching as high as 40 per cent., or even more, of the premiums received. The tendency of companies offering these high commissions has been to stipulate that in consideration thereof they should be favored with lines of insurance on the classes of business on which the loss ratio was usually maintained at a lower percentage than that obtained from the business as a whole. The consequence of such action was to divert an undue amount of the insurance of these more profitable classes of risks, to the companies paying the higher commissions.

These companies were as a whole less deserving of

this consideration both because the protection they offered was, for the most part, of a lower grade, owing to their being of inferior financial strength, and because it left to the companies carrying the heavier end of the insurance burden—that is, the hazards of the more frequently burning classes—an unfair share of the loss. But the low commission companies were not the only ones adversely affected by this tendency to pay high commissions on the part of some of their associates; the public also were unduly burdened thereby, for since every added expense to be met from the proceeds of the business must eventually be cared for by the rate, the effect of increasing commissions is to maintain rates at a higher figure than would otherwise be necessary. This fact has become more and more apparent to the insuring public and has attracted the attention of various of the state insurance departments. In fact, the only criticism of the fire insurance companies by the state investigating committees relating to unnecessary expenditures, has been on this one item of compensation of agents and it has seemed not at all unlikely that unless there was a radical reform in this tendency, the time was near at hand when commissions would be limited by state law.

Another ill that resulted from this improper increasing of commissions was the drawing of more men into the business than its proper administration called for, the writing of insurance being undertaken in many cases by parties tempted solely by the high commission received, who would not otherwise have considered it as being worthy of the time that they were called upon to give it. This meant an army of small agents, with many of whom the placing of fire insurance was but a side issue. Not a few of these, through lack of study and attention, were poorly equipped to properly care for the interests of the insuring public.

Conditions finally became so acute that a strong majority of the larger companies joined in a united effort to prevent this very serious and growing evil that was resulting in an unnecessary number of agents, that pointed directly to state interference, and that burdened the public unduly, owing to the greatly increased cost of handling the business. Organizations having for their purpose the object of limiting expenses of this nature are termed in general, "Commission Compacts," and at the present time there are several such organizations in the United States. The Eastern Union, located in New York, and the Western Union, with its headquarters in Chicago, are the two most widely known associations of this sort. The former controls at the present time the rates of commission that can be allowed by its members to their agents in all of the Atlantic Seaboard States, with the exception of New Hampshire, and in all of the Southern States where not prohibited by law. The membership of this association is made up at the present time of nearly eighty of the larger companies, carrying upwards of 75 per cent. of the entire stock insurance written in the territory mentioned.

These companies have individually signed contracts pledging themselves to maintain uniform rates of commission throughout the territory mentioned. These commissions for the greater part of this territory, except the few larger cities, range from 15 to 25 per cent., according to class of business written. Where an agent representing any of these union companies will sign with each one of such companies an agreement or contract that he will not accept from any of his companies, whether union or not, commissions exceeding those allowed by the union, he is given the right to charge up against his union companies commissions at the rates of 15, 20 and 25 per cent. The higher commissions are for certain specified classes, such as dwellings, private barns, some public institutions,

and the contents of same, 20 per cent. on certain other public buildings and their contents, and also on brick or stone mercantile buildings of specified occupancy, but not on the contents of the same, and 15 per cent. on all other classes of business.

If an agent does not care to bind himself by an agreement of this sort, but reserves the right to accept from any of his non-union companies commission compensation at any rate that they may mutually agree upon, the union companies are pledged not to pay such agent over 15 per cent. commission and 1 per cent. allowance to cover certain legitimate charges such as postage, telegrams, etc.

The strength of the union companies at the present time is so great that most of the agents in the Eastern territory have elected to run their agencies on the 15, 20 and 25 per cent. or so-called "graded commission" basis.

In the cities of New York, Philadelphia, Boston, Baltimore, Buffalo and Pittsburg, where the broker is such a prominent factor, special allowances for increased commissions are made, all of which are subject to an agreement to maintain a uniform standard on the part of union members. In the case of some of these cities the rates of commission and brokerage have been incorporated into the constitution and by-laws of their local association and so become binding on practically all agents and companies.

In certain other of the commission compact organizations, notably the Western Union, a system of so-called "separation" prevails, that is, no union company will remain in an agency where any non-union companies are also represented, whether the latter are paying higher commissions or not. This results in the agent electing to drop either all of his union or all of his non-union companies. Its effect has been, owing to the strength of the union contingent to make the larger agencies as a whole, union agencies.

Commission compacts would seem to be expedient and proper business schemes working in the interests of the public, of the companies, and of the agents alike. The primary idea is that a certain standard of commission is recognized, say 15 per cent. The companies then represent to their agents that as a business proposition it is worth something additional to them that there shall be no other companies in the same agency paying a higher rate of compensation, and, in consideration of the agent's agreeing to receive only a uniform compensation from all companies for the performance of the same class of service, the companies agree to pay such agents something additional for this value received. It should commend itself to all instantly that there should be only one rate of payment for identical service rendered by one agent for the several companies who entrust him with their commissions of authority. The public is unquestionably benefited by such organizations, since their tendency is to reduce the cost of operation and consequently reduce the rate. They are of still further advantage, because the payment of an unwarranted and extravagant commission for the selling of a company's policies necessarily impairs to just such an extent its financial strength and its ability to maintain sufficient funds to safeguard the interests of its patrons in the event of excessive fire losses.

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CHAPTER IX

SPECIAL RISKS AND INSPECTIONS

BY FREDERICK C. MOORE

It is now about a decade since the pioneer stock companies established special risk departments for underwriting and inspecting certain classes of risks, notably those equipped with automatic sprinklers, fireproof buildings, electric light, power and traction and gas properties and for the accomplishment of insurance engineering work that is from time to time requested by its agents or patrons, the scope varying with different companies. Although the classes of business under the jurisdiction of such a department are comparatively few in number, territorially it covers the largest field of any of the various underwriting departments, almost invariably the entire field reporting to the home office, which contributes to make the work particularly interesting and instructive. The sprinkled risk class was responsible for the formation of these departments and it is the most important one they have. Ten years before special risk departments of the present sort were established, or about the time the automatic sprinkler business began to grow out of infancy into childhood and forecast a lusty youth, the attention of certain large companies was attracted and two inspection bureaus formed for the sole purpose of inspecting sprinkled risks, one operating in New England and the other in the Middle States. Intimate acquaintance with this class of business through the bureaus, giving rise, no doubt, to a two-fold motive, resulted in the birth of the special risk department, by whatever variation of that title it may be known, the motives being a belief that the business could be increased by intensive cultivation by an expert and that it was a

dangerous business to write fully without more detailed underwriting consideration than it was possible to give it as one of many classes in an office; this because of the heavy liability often assumed on a risk subject to one fire relying on the sprinkler equipment, and the vital importance of correctly gauging the ability of the sprinkler system in the first place and keeping a sharp eye on its subsequent condition. The conditions to be met naturally caused the selection of managers for these departments who were primarily, so far as business training went, expert inspectors particularly well acquainted with sprinkled risks, and capable of developing into good underwriters. The men in these positions are generally of this sort, having previously had ten years or more practical field experience.

The office manner of using such a department varies much, in large companies extending to the care of practically all the office detail, including mapping the lines which is valuable for the more intimate acquaintance with the business it engenders, and to keeping the files of this department by themselves. A card index and vertical filing system are used, so that at a moment's notice the full department history of any risk can be referred to, with the present liability, and immediate decision given in reply to business queries, so often made over the telephone or by telegraph. In a few cases, these departments have expert inspectors of their own, who solicit business, make inspections and give special advice to the agents or to the assured on his risk. The company with a complete department can, therefore, not only transact the incidental office business, but by means of inspectors can give valuable help to its agents and assured by expert advice on the spot.

The special information upon which the underwriting is done, and, to a certain extent, the business directed, is obtained from inspections issued by inspection bu-

reaus, very importantly supplemented by reports from the field men of the company. These reports must be promptly examined; those for new risks provided with an authorization of the line to be written with its arrangement; those for risks previously inspected separated into those which show changes and those which do not and the former referred to someone capable of judging the relative importance of the changes and their effect on the existing liability or authorization, and any necessary action taken, the wisdom of which very largely determines the efficiency of the department.

Having secured the business it is necessary to determine just how the liability shall be apportioned unless that has recently been done in anticipation of the event. The general reasoning applies to all classes of risks. Consider that the agent has written a policy for \$50,000 and that he has notified the company a day or two before the insurance takes effect, as should always be done to give ample time to provide re-insurance for any excess beyond what the company is willing to carry. The first thing is to decide how much of the insured property is subject to destruction by fire at one time. If it is all in one building of unbroken area, obviously it is a single risk, that is, subject to complete destruction at one time, notwithstanding estimates of bureaus otherwise sensible, of 10, 15 or 20 per cent. probable loss in one fire, which they are in the habit of making on sprinkled risks. It is significant that those who make them are not responsible for risking any money on the basis of such highly optimistic estimates. It very often happens that the property is composed of several buildings and their contents, in which case they will not all burn at once if they are far enough apart, or are built with brick or other non-combustible walls and have the mutually exposing openings therein efficiently protected by wired glass, fire shutters, open sprinklers, or better yet, these walls have

no openings. Even in such cases separate buildings are frequently burned by exposure of one from the next. This is a vital and difficult question, yet the estimates of underwriters will agree remarkably well, made from the customary information afforded by the regular insurance maps—which are discussed at length in Chapter XI—or by the surveys of inspection bureaus, added to experience, and depending on the reliability of the separations or cut-offs, as they are usually called; all this affected by the combustibility and amount of the contents, the protection applied outside, the direction of prevailing winds, and other conditions, in kaleidoscopic variation. Finally, let us say, the risk is decided to be subject to a loss of 30 per cent, which in this case is \$15,000, and the governing question is, will the company risk \$15,000 on one loss, unless, and this is important, there is some portion of less proportionate value, it may be only 10 per cent. or 15 per cent., where, owing to heavier hazard, poorer construction, exposure or other bad conditions it is inadvisable to risk the \$5,000 or \$7,500 involved, even though it would be quite wise to risk \$15,000 in the section of greatest value, when the less valuable section is the governing factor. Suppose that \$10,000 is all that it is desired to carry subject to one fire, then three and one-third times that line is the total capacity of the company on that particular risk, or say, for general convenience \$35,000, then there is more at risk than the company is willing to carry, and \$15,000 of the liability is given to another company, without notice till afterward if there is a treaty between the two—that is, a written agreement providing a definite course of action for such transactions—or by application to and specific acceptance of liability by a company not governed by a treaty. The chance of having one fire burn two or more adjacent risks, insured separately, is always considered whenever a policy is reported, in the same general manner de-

scribed, and this principle carried to the extreme leads to the consideration of the possible loss of whole towns or large areas of cities by conflagrations, with the establishment of a limit of liability to be assumed, to protect against excessive conflagration loss.

There is quite wide variation in the opinions of different underwriters concerning what is the proper liability on a single risk, for any particular kind, due to the general policy of the company, its experience with the kind of risk in question, and the differences of classification, for, leaving out of consideration sprinkled risks, the loss record of the class will exert a strong influence. This is because there is a more or less typical arrangement in risks of the same kind, although the modern individual risk of any class must not be too severely damned for the losses of its class, which may have been experienced with a radically different arrangement of hazards and construction, but is entitled to careful individual study, as the risk may have been much modified by intelligent engineering. The size of the line is largely a question of the chance for fire occurring, the probability of its control, and the susceptibility to damage of the property exposed, involving many conditions. Regarding sprinkled risks, there is a trite, but unreliable saying, "A sprinkler system levels all hazards." Whoever originated it deserves the next niche to the author of "All men are created free and equal." In the first place, there are all kinds of sprinkler systems, some of which would not put out fires under ordinarily favorable conditions; secondly, there are hazards which we can not expect sprinklers to control; and thirdly, the ultimate object of sprinkled risk underwriting is profit, so that, even if a fire is extinguished, it makes a big difference whether it results in a 35 per cent. loss on dry goods or 7 or 8 per cent. on plumbers' hardware. It is obvious, however, that because a good sprinkler system will extinguish

ordinary fires and, therefore, decreases the danger and lessens the difference in degree of hazards, there naturally is less reason to classify sprinkled risks by occupancies and such sub-division of the sprinkled risks is usually limited to broad generalities.

The number of sprinkled risks has grown rapidly and is destined to continue to grow because the protection sprinklers afford is so good that the reduction of rate is such as to make their installation a very good investment when the amount of insurance is great enough, say \$50,000 or more, and often when it is less, depending on circumstances. Sprinkled risk underwriting is complicated by the frequency with which policies are written to cover property which has a large proportion of its value not protected by sprinklers, and it often requires special inquiry to find out what that proportion is. It is easy to fatten the premium receipts of the sprinkled class by including in it all risks which have any sprinklers at all, but unless discrimination is exercised to exclude from it those with too large a proportion not equipped, the loss ratio will be subject to heavy increase and violent fluctuations, making a fair comparison impossible. Such unequipped parts as lumber yards and storehouses, frequently incidental to such risks, are noteworthy illustrations. Granting the existence of conditions inside a risk that may affect the degree of efficiency of sprinklers, such as possibility of explosion which may break main water supplies, hollow contents or construction which prevents water from reaching the fire, too much oil or other light combustible material to burn, there is an external influence that seriously threatens or overcomes the protection of any sprinkler equipment, namely, exposure from fire in adjacent property. It is much like a fight between a regiment armed with pop-guns and one with rifles, the latter will destroy the former from a point out of pop-gun range if ammunition holds out. So any

exposure fire can seriously damage or destroy a sprinkled risk if the flames can break into it, provided the exposure continues long enough. This is true of local exposures. It is more emphatically true of conflagration exposures.

Sprinkler protection has its limitations, but there is a strong tendency to ignore them which is as unfair as to deny the efficiency of such protection. One of the most common errors of management is to allow too much water to be used from hydrant streams, depleting the supply available for the sprinkler system to a dangerous degree, and other adverse conditions already mentioned also contribute from time to time to cause heavy losses.

Property owners are so much interested in sprinkler protection that a reference to the general methods of installing sprinklers will probably be of interest to them. Except for a comparatively small number of large plumbing and piping firms, who have grown familiar with the work through long experience, it is all done by the corporations who own and manufacture the sprinklers and who are specialists in it, and only those who specialize can hope to be or to remain expert in the numerous requirements of the rules. Therefore, the employment of local firms, who at most do only occasional jobs of this kind, has not been favored by those who are obliged to pass judgment upon sprinkler systems.

Assume it is decided to equip a risk. The owner will ask for bids from about half a dozen sprinkler manufacturers, based on a plan showing the sizes and general course of the supply mains and the source of the water supplies, accompanied by requirements, both obtained from, or at least approved by the accredited representative of the insurance board or bureau which will pass final judgment on the completed protection, and thus determine what the insurance will cost under the new conditions. Each competitor will send an engineer to survey

the risk, who will make sketches and locate thereon the framing of the ceiling, partitions, enclosures, nooks and corners—all of which influence the number of sprinklers required—and who will locate the main pipe lines, risers, etc., from which the estimates are made. For an ordinary risk this will require but a day. The bids are submitted, each one specifying the number of sprinklers on which it is based and unless the building is of very regular layout, no two of the bids will agree in the number of sprinklers named. This difference is because the sprinkler rules allow the exercise of individual judgment, which may under certain circumstances, lead to a marked difference in the number. In a recent case there was a maximum difference of 120 in a job requiring about 560 heads. It follows that one bid may be unnecessarily high or another lower than is necessary to meet the standard of the inspector. Therefore, no comparison to determine which bid is most favorable can be made without finding the cost under each, based on the same number of sprinklers, an adjustment made possible by a clause which every such contract should contain, stating the price per sprinkler to add or subtract if more or less than the stated number is required, up to a variation of 5 per cent. either way, beyond which special agreement is necessary. The proper number to select as the basis of comparison is that which will not only comply with the rules but will furnish the desired protection, to determine which expert impartial advice is highly desirable. There was a time, now happily past, when it was the frequent practice to purposely state a far smaller number of heads in the bid than would satisfy the requirements, to deceive the unsophisticated buyer into believing that it was lower than that of some more honest competitor. After the necessary number of additional heads had been put in and paid for at the stated price per head the true cost was apparent, too late.

The successful competitor will make working plans from which a bill of materials will be made up, to enable the pipe to be economically cut. This plan will be submitted to the insurance critic in charge for approval before cutting the pipe. The contract should require the work to be done according to the current rules and requirements of the insurance authorities having jurisdiction and be subject to their approval.

Incidental to the work of equipping is the cartage of materials, digging and backfilling pipe trenches, making pipe holes through foundations and other walls, floors and partitions, painting pipes, interior refinishing, etc., which it is almost invariably cheaper for the owner to provide for himself than to allow it to be done under the sprinkler contract, for the sprinkler contractor is usually more or less a stranger to the town and to the local conditions and accordingly figures high enough on these items, which he has to hire done, to cover unforeseen contingencies. The contract should plainly state the conditions in this respect.

The regular stock is usually cut at some central work shop, practically never on the job, and even if this work is begun as soon as the contract is signed, two weeks or more will elapse before any of it reaches the risk. On an ordinary risk of moderate size about 150 sprinklers a week is a fair expectation of accomplishment, but on large risks, especially where the work causes more than usual inconvenience a larger force is used and greater output secured. Much less inconvenience is usually experienced by the property owner than he anticipated.

When the installation is finished it is tested under pressure, and inspected by those whose approval is required by the contract before the final payment is made, part of the price having been paid at intervals before, according to the contract conditions.

Where there is a connection to city water mains with-

out a meter no service should ever be taken from the sprinkler system, for even if a water rental is charged, which is seldom, it does not contemplate any service draught. Neglect to observe this obligation has led to serious disagreements between the water board and the consumers and made it difficult in places to get proper city water service.

A great deal might be written about the automatic sprinkler system, but let us here impress upon the property owner that when he puts in such a system and receives a lower rate of insurance on that account, he assumes the responsibility of keeping it in working order, and that this requires some supervision and care, even though much less than his machinery of production. Let him, therefore, assign this duty to a responsible employee who shall be informed and shall make frequent inspections and reports.

One who is associated with the underwriting-engineering work of a company is soon made to realize that there are many insurers who do not understand that the companies are always ready to recognize logical improvements in a risk which reduce the fire risk or decrease the bad effect of it, by a reduction in the cost of insurance. How best to make the improvements is the province of the insurance engineer. In estimating the rate of insurance on a risk the usual method is to start with a basis for a perfect risk and add to it charges for various defects of construction, hazard, and protection. Any owner can find out how his rate charges are made up and if he gets the right advice, how to make the improvements to obviate this one or that one of the charges. It is often found that certain changes can be made at a cost which makes the investment a good one, on account of the decrease in rate thereby effected. With a view to help those who are not informed on such matters to judge just how much changes will cost, we give hereinafter the approxi-

mate prices of the more common devices and materials used in connection with improvements to risks.

To illustrate the principle further, assume a risk of \$100,000 insurance on which 15 cents was charged in the rate for the absence of fire pails worth \$4.50 a dozen, the charge totalling \$150 a year. With six dozen fire pails, costing perhaps but \$27, he could obviate this charge and, assuming the conservative life of pails at four years, an outlay of \$27 makes a net saving of \$642.60 figuring simple interest at 5 per cent. The same reasoning can be applied to other charges.

A somewhat different application can be frequently made to the effect of an important hazard upon a rate. Suppose the picker house of a woolen mill were so located as to seriously expose the whole risk and a rate charge of \$1.00 was made for that hazard, it would then cost the owner, if we assume the risk to be \$100,000, \$1,000 yearly for the hazard. Now if he changes the arrangement so the picker hazard can only affect that department alone, with an insurable value of \$10,000, we will assume, then he will save \$900 a year premium, only paying the hazard charge on \$10,000.

Very often some feasible rearrangement of occupancy will so shift the values, that a reduction in rate can be effected by the mere application of existing rates to the changed values, these latter having been reduced in the high rated places.

Marked changes in neighborhood exposure may change a rate either way, as may also changes in fire department, or municipal, or private protection. To recognize fully all the possibilities usually requires one familiar with the insurance business.

By means of inspection bureaus the companies keep informed of the physical conditions and offer advice to the insured concerning the improvement of his risk. If the latter really desires to safeguard his property he can

get much information from the inspectors, who are specialists in their business. The principal reasons for the existence of these bureaus are economy, the necessity for having some organization that can secure important improvements with the weight of influence that such an association of companies carries—but without making this work personal to any particular company—and the development of skilled inspectors.

The average cost of inspections is from \$10 to \$15 each, depending on the general nature of the work and the distribution of the risks in the territory, and this even when the work is done on a large scale conducive to economy. It would cost more for a company acting individually to do it with the same thoroughness; an expense which one company's share of the premium would not warrant. Many risks are so large that it requires more than one day to inspect, so that a large organization will not average more than 300 to 315 inspections per man per year. The impracticability of making thorough inspections by any other means than associations of this kind is, therefore, clearly apparent, when it is considered that every company is writing many hundreds of risks which require such inspection.

The bureau inspection system is favorable to the assured in giving him a well considered opinion, edited by the executive of the bureau, and resulting from the experience of many men working in a large territory. It also reduces the number of inspections he undergoes, since one bureau inspection is promulgated to many companies. The assured can, therefore, afford to co-operate with the bureaus.

More and more the bureaus are coming to be looked upon by the companies as training schools for men whom they may desire as inspectors or special agents and the possibility of securing such employment ultimately is therefore a great attraction in bureau work, making it

comparatively easy to get intelligent, faithful men for that service, a large proportion now-a-days being graduates of some technical school or college. Although there are few big prizes, this vocation offers money rewards somewhat better than the average, at least, and very much more than the average certainty of permanent employment, which is an important consideration, but it almost invariably demands that those who follow it shall travel for many years, perhaps for the entire business life, and no man should enter it unless he can accept that condition and work happily under it.

The best inspector is a combination of engineer, chemist and reporter. With the qualities of the first two he can understand what he sees well enough to report it intelligently, but he must report facts so that the reader in the office of the insurance company can draw his own conclusions and govern his underwriting accordingly. The training of a bureau inspector does not make an underwriter of him, so that his opinions are the least important part of his report, but the facts which he sets down are vital. The inspector of a company, being trained from the company point of view, soon learns to form opinions of value in underwriting.

An inspector must always remember the obligations imposed upon him as a privileged visitor to the risk he inspects, never take outside parties into his confidence, and be broadminded enough to look at his problems from the assured's side of the question also, which makes him able to deal intelligently with the other in disputed questions, and, therefore, effectively. There is something about the business that makes enthusiasts of most inspectors, the never ending variety, the growing fund of general knowledge, the outdoor life, or whatever else it may be, and as a rule their work is correspondingly earnest and unsparingly given. Their whole effort is to reduce the fire waste and, therefore, the cost of insurance

to the public. They are, therefore, public benefactors and should be treated accordingly, as they are in most cases. Their hours are from the early morning train till they finish their reports at night. It not infrequently happens that time at night or on holidays is gladly used to make tests or do other work at the risks that can not be undertaken at other times, and their devotion to the interests of the profession is noteworthy.

An inspector is usually chosen from the graduates of scientific schools and is paid \$50 to \$60 a month for the first year, three months of which is devoted to his training under the constant supervision of a skilled inspector. During this training the work of the novice is not used by the employers. In fact, his salary is a dead loss so far as any direct, immediate return is concerned, to which must be added loss from the decrease of production of the man who is doing the training. After that period the new man is entrusted with easy work and after several years, if apt, becomes able to do the best work. At the third year he is earning about \$1,200 and the fifth year \$1,500 to \$1,600. After that there is more variation. After attaining reasonable skill and acquaintance with the general conditions, it is better to determine what special branch of the business it is desired to follow and to get into it than to delay that action too long.

One thing that makes the average inspection bureau strong is that among the fifteen to twenty inspectors employed will be found civil engineers, mechanical engineers, chemists, electrical engineers, architects, etc., so that whatever special problem arises it can be considered by some one with special training in that general line. The result is that many special hazards are first brought to the attention of the manufacturer or user by the insurance authorities and most of them are glad to have this help and solicit it. In improving construction and protection, reducing hazards and the bad effect of hazard, a

great deal of good work is being done through the medium of the inspection system. Used in the best way, inspections every six months or oftener, it corrects and prevents many defects that would cause insurance loss which would unquestionably notably increase without this organized effort to check it.

The assured as well as the inspectors frequently have need of knowing the approximate cost of the devices and materials commonly recommended in connection with improvements to risks. For the benefit of those who may not be familiar with them we give the following prices, which are as nearly as possible correct for the average conditions and locations, and do not include cost of installation unless expressly stated.

Crowbars—\$1.50 each.

Extinguishers, chemical—3 gallon hand extinguishers, \$8-\$10 each.

Fireaxes—8 lb. \$1.80 each; 6 lb. \$1.60 each.

Fire-doors, tin clad—30 to 35 cents per square foot, and \$11 to \$16 additional each for hardware and erecting.

Firepails—\$4 to \$5 per dozen.

Fire shutters—30 to 35 cents per square foot, \$1.50 for hardware and \$2 for erecting.

Hose

Cotton, rubber-lined (for outside use)

1	in.	diameter,	32	cents	per	foot,	coupled
1½	"	"	42	"	"	"	"
2	"	"	48	"	"	"	"
2½	"	"	55	"	"	"	"

Linen (for use inside buildings)

1½	in.	diameter,	15	cents	per	foot,	coupled
2	"	"	18	"	"	"	"
2½	"	"	20	"	"	"	"

Hose nozzles—Underwriter play pipes, \$5.00 each.

Hose spanners—\$1.50 per dozen

Hydrants, with hose valves on outlets—2-way, \$56 set; 3-way, \$63 set.

Pipe, cast-iron 6 in., \$1.00 per ft. laid; 8 in., \$1.50 per ft. laid; 10 in., \$2.00 per ft. laid

Excavating and backfilling 5 ft. cover.

Soft earth, 25 cents per running foot.

Rock, 75 cents upward per running foot.

Pipe, wrought-iron; cost per foot (pipe only):

Size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	5"	6"	8"
	3c	4¼c	5¾c	7c	10c	16c	20c	26c	29c	38c	50c	\$1.01

Pumps, underwriter—

Rotary, with friction drive		Steam
500 gallons	\$600	\$575
750 " "	690	775
1000 " "	805	890
1500 " "	1100	1300

Sprinkler systems, automatic—Inside work, installed complete, not considering tanks or any other special supplies, wet system, building of regular outline and ordinary interior framing and finish, ordinary height of ceiling, ordinary occupancy, about \$4 per sprinkler for a job of average size, say 400 to 500 heads. Large jobs would average somewhat less. High ceiling or roofs, any conditions making labor difficult, a location remote from the ordinary field of operations, all make a marked increase in cost.

For outside sprinkler systems, in connection with other sprinkler work, estimate \$5.50 a head for ordinary conditions.

Tanks—

Pressure, 4500 gallons, \$425; 6000 gallons, \$510.

Gravity, steel on steel tower

20,000 gallons 75 ft. tower \$2500, erected; 30,000 gallons 75 ft. tower \$2900, erected; 50,000 gallons 75 ft. tower \$3650, erected.

Wooden tanks on ordinary towers about two-thirds of these prices.

Wooden, on building, erected—

No superstructure		Steel superstructure
10,000 gallons	\$350	\$550
15,000 " "	400	655
20,000 " "	525	850
25,000 " "	600	975

Valves, gate—

For underground pipe	6 in.	8 in.	10 in.
Gate valves	\$12	\$18	\$27
Check valves	15	22	36

Post Indicator \$17 each

For inside piping—	2"	2½"	3"	3½"	4"	6"	8"
Target Indicator	\$5.50	\$7.00	\$8.75	\$9.50	\$11.50	\$14.25	\$23.50
Rising Stem	7.00	8.00	10.00	11.00	15.00	18.00	28.00
Check Valves	3.50	4.25	5.75	6.75	9.00	11.75	18.00

Waste Cans—\$2 to \$2.25 each.

Watchman's clocks—

Portable

6-key, \$52.50; 9-key, \$55; 12-key, \$57.50; 16-key, \$60; 24-key, \$80; 35-key, \$97.50.

Electric—\$15 to \$20 per station installed complete. Large favorable installations less.

Wired glass windows—70 cents to \$1.75 per square foot, including iron frames.

Polished glass, about 50 cents per square foot additional for ordinary sizes.

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(See also *Fire Prevention*)

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CHAPTER X

CO-INSURANCE

By EDWARD R. HARDY

H. S. BELL of England, in his recent work on "Average and Contribution in Fire Insurance," thus speaks of the origin of the practice:

"To ascertain the meaning of 'Average,' it is necessary to trace its history as far as possible, and to enquire into the circumstances of its application and the principles on which it is founded."

Its origin cannot be traced, but that its principle is of ancient date is evident from the following passage taken from Walford's Insurance Cyclopædia (1871):

"There has been a great deal of speculation, naturally, as to which were the first people to settle the principles of maritime average in the form in which they have been handed down from nation to nation, for, say, something like 3,000 years. We find nothing approaching the subject of average in the ancient Hindoo Laws. The Koran (admittedly of much more modern date) is silent thereon. The Sidonians, great in commerce, leave no trace of having understood maritime average. The Athenians do leave some traces; but all that we really do know, or have ground for believing, is that the rules which fixed the reciprocal obligations of the owners of the cargo of a vessel to contribute towards the reparation of sacrifices made for the common safety in a storm, were the same as those of the Rhodians, who next succeeded them in the greatness of commercial enterprise. The Rhodian practice of maritime average has happily been preserved to us in an authentic form; but this only from the circumstance of the Romans having fallen back upon it for guidance in the formation of their mercantile code. While this is a testimony to the perfection of the Rhodian cus-

tom, it has also been the means of extending the practice of maritime average to every civilized country."

The custom became incorporated in the Roman civil law, which was adopted by nearly all the admiralty courts of Europe, including our own, and hence "its spirit is embodied in many of the decisions of our courts down to the present day." Walford further says, "If the practice of marine insurance were discontinued to-day, the principle of average, which in this sense is average contribution, would continue until maritime commerce itself became extinct." Hence it will be seen that the doctrine of average contribution is of far more ancient date than, and quite independent of, insurance. It is founded on principles of equity and is by no means peculiar to insurance.

Walford's definition of maritime average (or general average) is: "A contribution made by all the parties concerned in a sea adventure to make good a specific loss or expense incurred by one or more of them for the general benefit."

Another definition, taken from "Average and Contribution," by Manley Hopkins, is the following:

"A contribution according to value made by the associated interests which form a marine adventure."

In these definitions it will be observed that the associated interests, or all the parties, are taken into consideration, such a course being essential to the attainment of true results from the application of the principle.

Under maritime law, each member having goods on board and the owner of the vessel were bound to share in any expense incurred for the general benefit, and each had to pay in proportion to the value of his property at risk. If a member or a ship owner insured the whole or a part of his liability, the insurer would take the merchant's place to the extent of the insurance, and so would take upon himself the whole or part of such liability. In

the event of part only being insured the merchant's liability would still remain, but only to the extent of his under-insurance. Hence the principle of average contribution as between merchant and insurer would mean that the liability of the latter would be limited to such a proportion of the former's loss as the amount of the insurance might bear to the value of the property insured.

Co-insurance, or the average clause, as it is sometimes called, is one of the most important features in connection with fire insurance. In the case of insurance covering property all losses should be based on indemnity only and to secure absolute equity in making the rate the factor of co-insurance must be taken into consideration.

While commonly called co-insurance the word is rather misleading, but having become a part of the common speech, it probably will not be displaced. Co-insurance or co-insurer would naturally be one who insures something with another, that is, assumes a part of the risk of the insurance, whereas the phrase, as commonly used when the co-insurance clause is spoken of, means that the insurer has agreed to carry insurance to a certain amount of the value of the property and failing to carry that amount he loses a certain percentage of the loss. In that case, having failed to carry with the company a sufficient amount of insurance, the insured does become a co-insurer because he really insures himself for a part of the amount. A piece of property for \$10,000 with 80 per cent. average or co-insurance, would require insurance of \$8,000 in amount. If the insured only carries six thousand and a loss occurs, the settlement will be based on the following rule: namely, to return to the insured such a part of the loss as the insurance carried is to that which he agreed to carry. The insurance should have been \$8,000, the amount carried was \$6,000, which is three-fourths of the required amount; therefore, in any loss which occurs, three-fourths of the loss will be paid.

It is only in that case that the insured can be considered a co-insurer. But the workings out of the matter are not the vital points of the subject but rather the broad question as to how such a principle came into insurance; why it should be so steadfastly striven for and why it should have aroused such intense antagonism as to lead to its being prohibited in certain states.

For the correct answer to these questions, it is necessary to go back to the very beginning of things, back, in fact, beyond the times when insurance, even marine, the oldest of all, was known.

A simple illustration will be the best method of bringing out the origin of the whole subject of co-insurance. One can easily imagine a group of merchants or farmers, if one will, taking a cargo in the most ancient days, to the city of Rome. The means of transportation was one of the small ships of the day. A storm arose. It became evident that unless the vessel was lightened of a part of her cargo, all would be lost. Of all the shippers who are on board, no one is willing to sacrifice his share of the cargo that the others may save theirs. An agreement, however, is struck among them that if one or more will throw his part of the cargo overboard, then the others will divide the loss with them. This is agreed to and a part of the cargo sufficient to lighten the vessel is thrown overboard. One might assume that there were ten merchants and that each had ten sheep and that it was necessary to sacrifice twenty of the sheep in order to bring the vessel, the remainder of the cargo, and all hands, safely to Rome. The ten shippers will then reach Rome with eighty sheep instead of one hundred, and eighty divided among the ten will give eight sheep apiece. There was, of course, one other contributor to the sacrifice, and that was the owner of the vessel who also sailed her. He had a direct interest in having a portion of the cargo sacrificed because if it had not been done, he probably would

have lost the vessel and himself as well. So there really will be eleven contributors to the loss of twenty sheep. The owner, of course, will lose on his freight charges, while the others will lose on their expected profits from the sheep. Now, in this case, where the contribution was made by all, each one had to contribute on the basis of his full interest in the voyage. No one of the shippers was permitted to say, "I will contribute the value of one sheep toward this loss," and so escape with a small contribution. No other was allowed to say he would contribute two, three, four, and so on. Each one had to contribute according to the total value of his sheep and the captain according to his total interest in the voyage. That is the principle of average which was worked out in mercantile affairs of the seas, centuries before there was such a thing as insurance. One day, some one was bright enough to see that by taking a small contribution from each person who shipped goods at sea, he could assume the losses of those who were unfortunate. That was the beginning of insurance. But the insurer when he started, took over the beneficent principle of full insurance for the property of the shipper. He did not permit the shipper to say, "I will insure about twenty per cent. of the value of my property, or ten per cent.," or, "I will insure a stated amount without any regard to its value."

Fire insurance, while it is based on indemnity, nevertheless failed to adopt the principle of the average clause which was so important and successful in marine insurance. In England, it was not used until business had really become well established, and then only applied to mercantile properties. It was of slow growth in the United States, as we naturally followed England in this respect.

The difficulty with the matter of co-insurance naturally arose when some person found that he had been carrying a certain amount of insurance, thinking he was fully

insured only to find out when fire came that the clause made him the loser to quite an amount. The legislature was appealed to and in several of the states co-insurance is forbidden, the same being Georgia, Indiana, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Missouri, New Jersey, Texas and Wyoming.

“ But,” said the reader, “ what injustice can there be in issuing policies without the co-insurance clause? Why is it of such large importance? Why is it not possible to issue policies which will make no reference whatever to the value of the property insured, or state any fixed relation of the insurance to the value.” The reason may be expressed by still continuing the illustrated form of presentation. All losses in fire insurance are not total, in fact, very few are. The great majority are partial. It would be possible for one situated so that he need only carry a small amount of insurance, 10, 15 or 20 per cent. of the value, sufficient, in other words, to cover the normal loss which he might expect from a fire, to protect himself by that amount.

An actual case was of a property worth \$2,000,000, insured for \$400,000. A fire occurred, and the loss was \$26,000. The policy carried the 80 per cent. co-insurance clause. Eighty per cent. of 2,000,000 is 1,600,000, hence, the insurance carried was one-fourth of the total of what should have been carried, and the loss paid was one-fourth of \$26,000 or \$6,500. Now, suppose there had been no co-insurance clause. Then the party would have received the full \$26,000; in fact, until the loss on this valuable property exceeded \$400,000 he would have been fully insured. But the company, or companies, who were carrying that insurance, and who had issued their policies on the supposition that there was 80 per cent. co-insurance, would, without the clause, have lost, since the insurance fund of all the companies would have received one-fourth as many dollars as all the companies thought they

were receiving. A wealthy owner may be able to do this, but in the case of important properties where mortgage loans have to be protected or where the owner does not wish to take the additional risk of this but wants the insurance, all such, although their property may not be subject to any greater loss than the under insured, are paying for the under insured property. If the rate of insurance is to be equalized on properties, the principle of a fixed relation between the property insured and its value, must be made part of the policy. There is no special magic about 80 per cent. co-insurance or three-fourths. The ordinary needs of commerce probably have had as much to do with fixing the amount as anything else. Policies are required by the mortgagee or required by the banks when loaning the money on collateral, and the insurance demanded in such cases is sufficient to meet the chance of a fairly heavy loss. Eighty per cent. represents this. In many cases full co-insurance is demanded. It can readily be seen, therefore, that there is no other way to establish an equitable relation between different insurers without the principle of co-insurance. It is difficult enough to compute just rates with a fixed co-insurance such as 80 per cent., and it would be infinitely more difficult to attempt to establish it for different percentages of co-insurance. Some day that may be brought about. It is evident, however, that as the percentage of co-insurance dropped to sixty, forty, or even twenty, that the rate must advance. With 100 per cent. co-insurance, total losses may be only one in 100 though they would steadily increase as the percentage of co-insurance dropped lower and lower.

E. G. Richards, United States manager of the North British & Mercantile, in 1908, before the Fire Underwriters' Association of the Northwest, said:

“ Co-insurance. Your attention is particularly directed to the effect of the absence of this obligation from the

insurance contract, which prevents a close approximation to equitable rates.

“ The basic principle of fire insurance being average, if every policy issued contained a condition that the assured should recover in case of loss no greater proportion than the amount insured bore to some uniform proportion of the value of the property insured, then all losses that occurred under such policies would be paid on that basis and the ratio then shown of losses to amounts written or premiums received in a particular class, would be a reliable basis from which an average rate could be justly and correctly predicated, and no one assured would secure any greater measure of protection for each dollar of value insured than any other. But, of the manifold premiums in a particular class for a specified time, if, as is now the case, some are on a basis of 100 per cent. insurance to value, others on 80 per cent., and many others but very lightly insured, and the majority or perhaps all without the condition above referred to, it is plain that the losses sustained in such class would be in larger proportion to the premiums as well as to the amounts insured, and thus the cost of insurance necessarily increased to those who carry full or substantially full insurance to value, with the opposite result for those who insure but a part of their values yet secure protection upon their full values up to the amount of their insurance.

“ There is no better way to illustrate this than by the system of governmental taxation, for the principle is the same in either case.

“ If the system of fixing by assessment the values of property subject to taxation was abolished, Citizen ‘ A ’ might pay his percentage of tax upon 75 per cent. of his values, while ‘ B ’ might pay his on but 50 per cent. of his values, ‘ C ’ on 25 per cent., and others upon any basis of value which they might personally choose, and in such event the government (state or national) would fail to secure a sufficient amount of taxes to meet its needs. The principle of equality between the various taxpayers would be destroyed, and the government would be unable

to fix a rate which could be depended upon to yield the sum required, because the total sum of assessed values would be wanting.

“ If fire insurance should ever be conducted by a state or by the national government, there is little doubt but that losses and expenses would be assessed against the insuring taxpayer in precisely the same manner as all other taxes are levied, viz.: upon the full assessed values of property so protected.”

The present form of the co-insurance clause, in the state of New York, reads as follows:

“ CO-INSURANCE CLAUSE. If at the time of fire the whole amount of insurance on the property covered by this policy shall be less than the actual cash value thereof, this company shall, in case of loss or damage, be liable for such portion only of the loss or damage as the amount insured by this policy shall bear to the actual cash value of such property.”

The average clause reads as follows:

“ AVERAGE CLAUSE. This company shall not be liable for a greater proportion of any loss or damage to the property described herein than the sum hereby insured bears to per centum (. per cent.) of the actual cash value of said property at the time such loss shall happen.

“ If the insurance under this policy be divided into two or more items this average clause shall apply to each item separately.”

In concluding this article, some questions, with the answers showing cases with and without the clause, may be profitable.

Question A

Company A insured \$1,000 on wheat
Company A insured 2,000 on oats
Company A insured 3,000 on corn

Company B insures \$5,000 on the grain, its average clause specifying that this policy shall attach on each

kind of merchandise covered in proportion as the value of such merchandise bears to all the merchandise.

There is no co-insurance clause attaching to either of the policies. The sound values at the time of the fire were:

Wheat.....	\$3,000
Oats.....	4,000
Corn.....	5,000
	\$12,000

The loss was:

Wheat.....	\$1,500
Oats.....	2,000
Corn.....	2,500
	\$6,000

What should each of the companies pay?

Question B

Company A.	Insures	\$2,000	with	80%	Reduced Rate	Clause
" B.	"	2,500	"	"	"	"
" C.	"	3,000	"	no	"	"

Sound value of the property at the time of fire, \$10,000.

Loss incurred, \$4,000.

What should each company pay under the above?

Answer to Question A

The \$5,000 policy in Company B is divided according to its average or distribution clause, as follows:

$\frac{3,000}{12,000}$ of \$5,000 = \$1,250.00, the proportion applying to wheat.

$\frac{4,000}{12,000}$ of \$5,000 = 1,666.67, the proportion applying to oats.'

$\frac{5,000}{12,000}$ of \$5,000 = $\frac{2,083.33}{\$5,000}$ the proportion applying to corn.

The loss is then apportioned as follows:

Wheat		Oats		Corn		Total	
Insures	Pays	Insures	Pays	Insures	Pays	Insures	Pays
A. \$1000	866.67	2000.00	1090.91	3000.00	1475.41	6000.00	3232.99
B. 1250	633.33	1666.67	909.09	2083.33	1024.59	5000.00	2767.01
\$2250	1500.00	3666.67	2000.00	5083.33	2500.00	11000.00	6000.00

Answer to Question B

Apportionment	Insurance	Loss	Company's Pay
Company A	\$2000	\$1066.67	\$1000
Company B	2500	1333.33	1250
Company C	3000	1600.00	1600
Loss to assured on account of operation of 80% co- insurance clause	\$7500	\$4000	\$3850
			150
			\$4000

The liability of Company A is determined as follows:

$$\frac{2,000}{80\% \text{ of } 10,000} \text{ of } 4,000 = \$1,000$$

The liability of Company B is determined as follows:

$$\frac{2,500}{80\% \text{ of } \$10,000} \text{ of } 4,000 = \$1,250$$

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CHAPTER XI

FIRE MAPS

BY S. EDWIN BUCHANAN

A SHORT account of how fire insurance maps were originally made, and how they are made now and have come to be such an important item in the assets of all live companies, may be of interest. Such an account may serve to show those who believe that in order to produce an insurance map it is only necessary to be equipped with a drawing board, several sheets of cross-section paper, some colored crayons and the ability to sketch a bit (and there are those who believe this) that as a matter of fact there is much more required to make a reliable up-to-date fire insurance map of a city, or even a small town. The maps as used by the companies today are the result of many years of experience, thought and labor.

D. A. Sanborn, a civil engineer, was in the year 1866, engaged in making maps of towns in Tennessee for the branch office of the *Ætna* Insurance Company at Cincinnati. The idea was then quite new but Mr. Sanborn looking a long way ahead, soon came to the conclusion that maps of town and cities similar to those on file in the *Ætna* branch office were certain to be valuable to other fire insurance companies. He resigned his position with the *Ætna*, journeyed to New York and lost no time in bringing to the notice of prominent fire underwriters in the East a plan for making maps of the various cities and towns in the United States. He met with very little encouragement at the start, but nothing daunted, proceeded to map a city of considerable size and importance in New York state.

The map was drawn to a scale of fifty feet to an inch, showing location and size of all buildings in the congested

section ; the materials of which buildings were constructed were indicated by colors, occupancies were written in the buildings ; fire walls, iron doors, windows in side walls and other details were shown by signs, some of which were used on the maps in the *Ætna* office ; others were originated by Mr. Sanborn.

When the map was completed, it was shown to the companies. A few of the prominent companies were pleased with the result and a number of orders were booked. Copies were made by hand—a tedious and slow method.

The support of the enterprise which Mr. Sanborn looked for did not come for a very long time. He continued to make maps and though often greatly discouraged because of the indifference shown by the companies, he believed that sooner or later they would appreciate the aid to the conduct of their business.

It took several years to get other than a few supporters of the map system. Mr. Sanborn did much of the actual labor required to produce the maps ; having only little capital, he more than once thought the enterprise would have to be abandoned. In time, though, other companies came to be patrons. Instead of making a hand copy of each map, the occasional services of a lithographer and hand press were needed and the future for the business was more promising.

This is a mere outline of the start to make maps for fire insurance companies uses.

There have been many changes in the methods of making and publishing these maps. After a time patrons asked that thickness of bearing walls be shown, as well as many details of building construction not thought necessary at first, all of which added greatly to the time required to make the surveys and to the cost. The original plan was to map the congested section of cities, the thickly built up dwelling territory and the special hazards a mile distant from the cities, but now, companies

and agents want practically the entire corporate limits—especially of large cities—included so that whereas a decade since all necessary territory of a city might be covered by a single volume, now so much more is mapped that three and even four volumes are the rule.

Suggestions of value have been made by the map users, details have been added by the publishers as experience dictated until from a rather crude beginning the maps have reached such a state of completeness that there is little an insurance man cares to know about the physical hazard of a risk that is not shown on the standard publications.

The labor of making the surveys is great and only a well organized staff properly directed, and an adequate producing plant properly equipped, can at all cope with the problem of putting forth reliable maps for any considerable territory.

Many men well qualified to make accurate surveys and correctly locate buildings, are not necessarily competent insurance surveyors. Field men have to be carefully trained so as to understand thoroughly what details of building construction must be shown on the maps. Intelligent young men who have had practical experience in land surveying, by careful coaching usually acquire the skill to make excellent fire insurance maps. Even so it is a matter of several years' training and experience before they are competent to do all the different kinds of surveying and inspection necessary.

When the survey of a city is completed, it is carefully gone over by an examiner, a man experienced in field and office work.

He looks carefully at each building. If there is a roof sign omitted, an opening shown through a party wall which from the construction of the buildings seems wrong, sign for fire-wall left off, unprotected openings shown, elevators or sky lights not shown, automatic

sprinklers not noted on each section of buildings so protected, and so on through all of the many details, he makes note of it all. A list of apparent errors and discrepancies is made and forwarded to the surveyor, who is instructed to again examine the doubtful points and report.

The surveyors are not permitted to make notes in a field book to be transferred to the map but the work must be done on the large sheet from which the transfer drawing is made—a sheet the size of the lithographed map.

Every precaution is taken to guard against errors. So many details have to be shown that if these should first be noted in a field book to be copied in the office to the survey sheet, many points would be overlooked. On the other hand if the surveyor notes on the map sheet the details of construction of each building at the time of making inspection, errors of omission, at least, will not occur.

The making of the surveys is the most difficult and important part of all the work. A careless or neglectful surveyor may easily turn out work so faulty as to make it necessary to have it surveyed again at a great cost and possible injury to the reputation of the publisher.

After surveys are received there is much to be done before completed maps can be delivered. First, as before said, the surveys are carefully examined, and possible omissions and apparent errors referred to the surveyor. The sheets are prepared for the draughtsmen, reference numbers to adjoining sheets compared, sheet and block numbers given; proper limits of each sheet marked on the key plan, street names and house numbers checked and any question as to surveyor's notes decided before sheets are given to the draughtsman.

The draughtsman makes a tracing on lithographic transfer paper of all the line work, then carefully removes the transfer paper, writing in all descriptive matter free

hand. The transfer sheet must be handled tenderly for it is easily torn and the marks of a finger will transfer to the lithographic stone as distinctly as the lines and writing. These marks can be taken off the stone but at much loss of time, so a good draughtsman will see that his transfer sheets are kept perfectly clean.

Of architectural and mechanical draughtsmen there are many, and good ones, but a competent autographer is not to be had in the open market. Not alone must the draughtsman be expert, he must learn the significance of the various conventional signs used on the maps and intelligently show all details as noted on the key.

From the draughtsman the sheets go to the proof readers and from them to the lithographic shop. The transfers are made on hand presses and the printing is done on modern power presses.

After the sheets are lithographed and properly dried, they are sent to the coloring department. The colors are stenciled on by hand, as the editions are small and better work can thus be done than by color printing.

Thus if the map of a large city is in work for a volume of one hundred sheets and an edition of say 175 copies, it means 17,500 sheets to be colored and each sheet to be separately handled for each of the different colors used on the map.

Then comes the work of mounting and binding. Collating the sheets is a simple matter, but with so many sheets to handle for so many different places, it is easy to make mistakes, and the work must be done by reliable people. The work of mounting can not be hurried. No commercial bindery could bind the maps satisfactorily. The volumes are so heavy and are used so constantly, not always gently either, often lasting for years without rebinding, that other than ordinary binding methods had to be devised. It is easy to understand that the bindery

must be in competent hands; the work the best skilled labor can produce.

As it is necessary to teach all engaged in the business from the surveyor to the man who finishes the bound volumes, it is also necessary to use none but the best materials. All loose sheet maps are printed on Crane's bond paper made especially for such use at the Dalton, Mass., mills. For the bound maps bond paper has too hard a finish. Correction items pasted on this paper will buckle the sheet. For these maps a special paper is used, a paper made by one of the best known mills in New England; it is of special size, weight and finish; when mounted on muslin it will stand the wear and tear of years.

In the course of time thousands of correction items are pasted on the maps of important cities and the paper used is of such excellent quality that erasures may be made and not appreciably affect the finished surface.

Binding boards are made to order; the leather, the muslin and all material used in the maps are the best the market affords.

The general use of the maps has come about only in recent years. At first the local agent resented the presence in his town of the fire insurance surveyor. The surveyor was looked upon as a meddler. Merchants and householders thought he was engaged in making notes by day so he could enter and rob by night. More than once have insurance surveyors been arrested as suspicious characters. It was difficult to get people to understand why in making a map it was necessary to examine a building from cellar to roof and it was still more difficult to get many of the fire insurance companies to use the maps as a system.

Changes come slowly. Now there is scarcely a village in the entire country that has not been visited by an insurance inspector. The local agent welcomes the repre-

sentative of the map publisher, doing everything in his power to assist the surveyor. The people are no longer suspicious and the companies look upon the maps as an indispensable factor in the safe conduct of their business.

From the very modest start in 1886 has been developed the Sanborn Map Company of today, publishing insurance maps of more than 7,000 towns and cities in the United States. These maps are the standard by which all similar publications are measured. This is easily understood when we consider that only a perfect organization could produce and keep revised such a vast number of maps. The publishing plant at Pelham, N. Y., is a model of its kind, occupying five acres of ground on part of which is a group of buildings of reinforced concrete construction, two stories high, sprinkler equipped and admirably arranged for the speedy publication of the maps.

In the publishing department there are 307 employees. Of surveyors and other employees there are 258, making a total of 565.

A visit to the plant would be of great benefit to the student of insurance engineering, while to the more experienced man a better appreciation of the skill required to produce maps and the care and painstaking efforts used to guarantee the subscribers the most reliable service would be evident.

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CHAPTER XII

FIRE PREVENTION BY THE COMPANIES

BY HENRY L. PHILLIPS

THE business of fire insurance because of its important position in the financial welfare of a community has become a very far reaching subject, involving among its various activities a close study of fire prevention, which may well be called the science or art of fire insurance engineering.

The development of this branch of fire insurance has been very gradual in our country, and while communities banded together more than a century ago to form the old volunteer fire department, the real beginning and awakening came much later.

It has been said that a blessing oftentimes proves to be a curse, and that "familiarity breeds contempt." Surely something is responsible for a per capita fire loss in the United States of about \$3 per annum, whereas, in six countries of Europe, namely, Austria, Denmark, France, Germany, Italy and Switzerland, the same comparative loss runs from 12 to 49 cents only. This very noticeable difference is unquestionably due to inferior construction in our country, and our own wonderfully extensive natural resources, of which we have been wont to boast, have been responsible for it. The ease with which lumber could be secured caused poor buildings and poor buildings cause heavy fire losses.

Fifteen years ago our annual fire waste had passed the hundred million dollar mark, and now it has gone beyond the two hundred million dollar mark, and is still growing, and due to the necessary replacing of burned structures, serious inroads are being made into our natural resources, and we are beginning to be confronted

with a crisis all due to carelessness and thoughtlessness born of abundance. But the country has awakened and a change has come. We realize we have wasted our substance and that we must have a care for the future. It is a hopeful sign that a wave of reform is sweeping over us.

The need for conserving our lives and property against destruction by fire has thus become crystallized into fire insurance engineering, to the study of which many are now devoting their attention, and in the analysis of which we find the following topics:

Improvement in Construction

Improvement in construction was first considered in connection with the mill or manufacturing establishments, but has since gradually extended over a much broader field until now more or less consideration is given this subject in practically all classes of buildings. This part of fire insurance engineering comes within the scope of the architects or mill engineers, who are beginning to realize the serious responsibility involved, though unfortunately in some instances good construction is not given sufficient prominence even now. For instance, some architects with much persistence, design manufacturing property to be of "joisted" construction, that is, with floors of one or two thicknesses of 1 inch or $1\frac{1}{4}$ inch boards laid on joists placed on edge, 12 inch or 14 inch to centers, in preference to the so-called "standard mill" or "slow-burning" construction having 3 inch or 4 inch plank with $1\frac{1}{4}$ inch top flooring, placed flatwise upon large timbers 8 feet or 10 feet apart. The former method, now almost entirely discarded by the more advanced engineers, gives much more surface for fire to attack, furnishes alleys or courses for fire to follow and also provides corners in which dust and lint may collect, all of which will allow fire to spread rapidly. The latter, with its smooth ceiling, which can easily be swept down and which furnishes no

edges or alleys for fire to catch hold upon and follow, is much to be preferred. The fire-resisting qualities of the " mill " construction exceed those of the " joisted " in a great measure, for the former will withstand a fire which may char a half inch or an inch off the ceiling, whereas the same blaze would undoubtedly wreck a " joisted " building.

Another illustration which will bring this subject, perhaps, a little nearer home has to do with the construction of the ordinary wooden dwelling and the more simple matter of providing stops or cut-offs in the framing at each floor. When this detail is lacking, a fire, starting in the basement, immediately runs in the walls to the attic and is carried to all parts of the building with the result that even with the present public fire department protection which we have in our cities, the house is doomed, or very seriously damaged. When, however, the little stops, even if only of wood, are provided, the fire is retarded for a sufficient length of time to give the public department an opportunity to extinguish it in the basement, or in whatever floor it may have started, before serious damage.

This work of improvement in construction is receiving wide attention, as many cities have adopted a standard building code which follows closely the suggestions that have been laid down in a code prepared by the building committee of the National Board of Fire Underwriters, and city governments are realizing the dangers in a community where buildings are of poor construction and are passing ordinances which will ultimately improve the situation.

The progress and growth of the structural steel industry and the use of fire proofing material and the development of concrete and reinforced concrete for building purposes have been of much help in improving conditions, and we can look forward to a much more general use of

these materials in the future. The results cannot be otherwise than beneficial.

Elimination of Fire Hazards and Causes

A hazard in fire insurance, strictly speaking, is a condition, or process or characteristic peculiar to a risk which in itself will cause fire. The term hazard, however, as generally applied, is used in a much broader sense. Speaking according to definition we could not ordinarily refer to construction as being an element of hazard, but in a broad way it figures largely in the analysis of the hazards of any given risk. For instance, take a cotton mill of poor construction and with all the processes, and compare it with the modern standard cotton mill having all processes; one is a very undesirable risk and the other, when properly protected, is a very desirable risk. The difference in the risks is due more to the construction than to anything else, and yet in analyzing these we consider one much more hazardous than the other for the reason that the hazards are not properly safeguarded.

The study of hazards is interesting. Some are simple; others complex. Some of the hazards are clearly defined; others are the subject of much discussion. To an underwriter, strictly speaking, the hazard does not carry as much weight as the rate. To the engineer or inspector the hazard holds first importance.

Paradoxical as it may seem, the process which involves fire such as a forge in a blacksmith's shop, the lead pot on a linotype machine, the furnace for heating brass in a small foundry, or anything of that nature where there is a flame or fire on the face of it, and would thus appear to be dangerous, is ordinarily safe. It is the process where the fire is concealed or lies smoldering, or is not in evidence, or where a fire will quickly result from friction, or something of that sort, that makes the process hazardous.

The development of this branch of fire insurance engi-

neering has been helped by the manufacturers, for the reason that we find the greater number of hazards in manufacturing industries, although undoubtedly some of the most common and perhaps pernicious hazards are found elsewhere.

Fire prevention goes hand in hand with improved construction, for many hazardous processes are now located in buildings entirely detached from a main manufacturing plant or are placed in rooms or buildings adjoining, which, however, are separated by a fire wall or some other "cut-off."

Fire hazards are ordinarily divided into two classes, the common, and the special.

Common Hazards

Those features most generally spoken of as common hazards are as follows:

Power, which covers the steam or other generating plant.

Fuel, which includes the use of hard and soft coal, the latter with its tendency to spontaneous combustion when piled above a certain height.

Heating, of which there are many forms, all of which should be properly safeguarded.

Lighting, whether by kerosene oil lamps, gas or electricity.

Oils, their use and storage.

Drugs, acids and chemicals of the ordinary type.

Paints and varnishes, their use and storage.

Benzine, naphtha, gasoline and turpentine, their use and handling.

Soldering.

Forges.

Fuel oil, its use and storage.

Oily waste and its disposition.

Waste paper and other refuse.

Matches.

Bonfires.

Each one of these subjects is a study in itself. Take, for instance, the use of electricity for power or lighting; for we now have a book of rules covering more than 100 pages of closely printed requirements. These have been prepared and formulated by the National Conference on Standard Electrical Rules, which comprises among its members manufacturers of electrical apparatus of all sorts, manufacturers of wire, electrical contractors, engineers, architects, and also the fire insurance interests, all working harmoniously toward the same end; that is to make the use of electricity as safe as possible. And considering the growth of electrical installations for all purposes, the results are almost marvelous. Or perhaps let us refer to the match hazard, which is probably the most pernicious of the common hazards and which is also as easily susceptible of proper treatment as any. The manner in which matches are left around promiscuously, and the fact that the so-called parlor or snap match is still so generally used, indicates a lack of appreciation and a lack of effort to better conditions on the part of the public while wonders could be accomplished if people would but unite with the intention of stamping out this evil. The general use of safety matches would stop more fires in this country than any other one thing. Some of our states have already considered legislation prohibiting the manufacture and sale of any but safety matches such as will light only when struck on the box containing them.

The hazard of heating causes many losses. Likewise, a great many fires are started from lighting of unsafe character, and then again, probably, one feature which is responsible for almost as many fires as anything else is carelessness.

The care and handling of waste paper and waste materials is a most important item. The destruction of such refuse by bonfires has been the cause of many fire losses, and rules and ordinances should be adopted by municipal-

ities regarding the accumulation and care and handling of such materials.

Special Hazards

In addition to these common hazards there are what are known as special hazards which are peculiar to any particular class of risk, and of these special hazards there are a very large number. As an illustration we might consider the hazard of the cutting block scrapings from a boot and shoe factory which will produce spontaneous combustion if left in a pile for a short time, or there is the picker room hazard in a cotton mill, which is responsible for probably 90 per cent. of the fires in cotton mills. These are merely mentioned to serve as illustrations of special hazards, for each class of manufacturing risks presents a study in itself which can be amplified to almost any length, and while a representative of the insurance interests rarely criticises processes of manufacturing per se, occasionally a process has been found which has proven dangerous, and at such times the insurance engineer has gone so far as to offer suggestions in regard to the method followed in manufacturing a given product. Many cases are on record where fires in manufacturing plants have been directly traceable to some particular process which in itself and without a careful analysis may not appear hazardous, but upon close investigation it has developed that this particular process has an inherent hazard. Study is at once made to see if the work cannot be carried on in some other way which will reduce or eliminate the special hazard entirely. While the manufacture of a given product is something which concerns the manufacturer, and while the insurance representatives fully realize it and do not encroach upon the manufacturer's privileges, it occasionally happens that the insurance authorities are of especial value to manufacturers, even in this way.

The Introduction of Fire Extinguishing Apparatus

Here again we start with the experience of the textile factories and I think, perhaps, the first step was the introduction of the old perforated pipe system, which consisted of a series of pipes with small holes at close intervals, these pipes being attached to the ceiling, and the water being obtained from a pump or from a water main. This system, however, was not satisfactory because it depended for its distribution of water upon the manual opening of a valve outside of the building, and, furthermore, the water wet the whole room, whereas the fire might have been confined to one corner and then, too, the system soon became inoperative owing to the readiness with which the small holes in the pipes became plugged. What was wanted, therefore, was something that would work automatically; something that would be on guard at all points and at all times and would act promptly and automatically throwing water only where the fire existed. And when it became so apparent that a device of this character was needed, a genius came forward, as has almost always invariably happened in the history of the world when a need has become clearly apparent, and invented the automatic sprinkler. This one little device has probably aided the progress of fire insurance engineering more than anything else and will undoubtedly in the future be more of a factor in fire underwriting than any other one thing. To be sure certain auxiliary arrangements are absolutely essential in connection with this feature, but nevertheless, the automatic sprinkler stands pre-eminently as the foundation of this division. At first, considerable doubt was expressed as to the value and practicality of this arrangement. After a few trials, however, in which the sprinkler worked successfully, it gradually gained in favor until now it is quite generally approved.

The insurance interests, representing many million dollars capital, recommended its introduction, although

their revenue is thereby reduced owing to the consequent lowering of rates. The fact that companies which formerly would insure only \$5,000 or \$10,000 on a single risk, will now hazard ten times that amount is sufficient proof of their faith in this protective apparatus.

The attitude of some municipalities toward the introduction of automatic sprinkler protection is a most welcome evidence of an awakening interest on the part of the public in the work of reducing the fire waste. In one city an ordinance has been enacted requiring sprinklers in all manufacturing buildings within a certain specified area, while in another, a law has been passed specifying that basements of school houses must be thus equipped.

By the introduction of automatic sprinklers the public is greatly benefited because insurance rates are materially reduced. Earthquakes and cyclones and to a large measure lightning cannot be guarded against and are not for mortals to deal with, but the automatic sprinkler can generally master the everyday sort of a fire when properly installed and when it is not handicapped by poor construction.

The many improvements which have been made in building construction are partly responsible for the success of the automatic sprinkler.

For example, the joisted construction offers great obstruction to the distribution of the sprinkler, while on the other hand the smooth " mill " ceiling greatly assists in spreading the water evenly over the surface. A poor construction, then, is a great handicap, while the value of good construction cannot be overestimated. Fortunately, the work of improving construction and of installing fire protective apparatus was taken up almost coincidently.

Formulation of Rules and Standards

The subjects involved in fire prevention and protection are so many and varied that an organization has been

formed for handling this work systematically, and under its direction the following topics have been analyzed and standardized and complete rules and full specifications prepared and printed for general distribution:

Acetylene Gas Machines and Storage of Calcium Carbide.

Coal Gas Producers (pressure and suction systems).

Electric Wiring and Apparatus, Installation Rules (Nat'l Electrical Code).

Electrical Fittings, List of Approved.

Fire Departments, Private.

Fire Doors and Shutters.

Fire Extinguishers, Chemical (for other than fire department use).

Fire Hose, for fire department use.

Fire Hose, for private department mill yard use.

Fire Hose, Unlined Linen, for use inside buildings.

Fire Pumps (steam).

Fire Pumps (electric).

Fire Pumps (centrifugal).

Fire Pumps (rotary).

Gas and Gasolene Engines.

Gasolene Vapor Gas Lighting Machines, Lamps and Systems.

Gasolene Vapor Stoves, for cooking and heating.

Grain Dryers.

Gravity Tanks.

Hose Couplings and Hydrant Fittings, for public fire service.

Hose Houses, for mill yards.

Incubators and Brooders.

Kerosene Oil Pressure Systems.

Lightning, Protection Against.

Nitro-Cellulose Films (storage and handling).

Oil Storage (fuel) storage and use of fuel oil and construction and installation of oil burning equipment.

Oil Storage (inflammable) systems for storing 250 gal-

lons, or less, of fluids which at ordinary temperatures give off inflammable vapors.

Oxy-Acetylene Heating and Welding Apparatus.

Railway Car Houses (storage and operating), Construction and Protection of.

Signaling Systems, used for the transmission of signals affecting the fire hazard.

Skylights.

Sprinkler Equipments, automatic and open systems.

Steam Pump Governors and Auxiliary Pumps.

Uniform Requirements ("slow-burning" construction, "inferior" construction, general hazards, oil rooms, general protection, stairway and elevator closures, watchmen, thermostats, etc.)

Valves, Indicator Posts and Hydrants, for mill yard use.

Waste Cans, Ash Cans, Refuse Barrels, Fire Pails and Safety Cans for Benzine and Gasolene.

Wired Glass and Metal Window Frame Construction.

The association which has done this important work and which is called the National Fire Protection Association, is a unique organization, for its membership comprises all interests, as the insurance engineer, the architect, the builder, the contractor, the waterworks man, the fire chief, the manufacturer, the merchant, the property man, the general public; in fact, anyone who is interested "to promote the science and improve the methods of fire prevention and protection" is eligible for membership, and all are on an equal footing. Much credit is due this organization for the successful and harmonious way in which this very important task is being carried out.

Examinations and Tests of Materials and Devices

With the rapidly increasing demand for fire protection devices, many articles were presented for use which were not meritorious. Consequently, it was apparent that some means must be provided for examining and testing

materials and devices for fire protection, and with this in view the insurance interests of the country have established the Underwriters' Laboratories at Chicago. This organization, which is located in a building which is probably the best example of modern fireproof construction that has ever been erected, examines and tests devices and these reports are submitted to the insurance interests. Those devices which have merit are given approval and the records published and given out in the approved lists for the benefit of the user. At the present time the following general classes of devices are listed in this manner:

Fire Appliances.

Electrical Fittings.

Stationary Gasoline Engines.

Gasoline Vapor Gas Lighting Machines, Systems and Lamps.

Suction Gas Producers.

Acetylene Gas Machines.

Storage and Supply Systems and Receptacles for 250 or less gallons of hazardous fluids.

These complete lists of classes are available for general distribution, and information that a device has been tested and found satisfactory is of inestimable value to the purchasing public.

Inspections

With the introduction of fire protection, experience soon showed that regular inspection of risks was necessary, and this work has been taken up by the insurance interests and has gradually developed to a point where all features are carefully considered. Starting in a simple manner with the inspection limited purely to the cleanliness of the property, it has gradually developed in every direction, until there is practically nothing connected with the construction, equipment, occupancy or processes of

any risk which is not now regularly inspected and examined by representatives of the fire insurance interests.

Examination of Building Plans

In the first place, any concern which is contemplating the erection of a building will invariably approach the insurance interests for the purpose of learning from their engineers if the plans which they propose to follow are satisfactory from a fire insurance standpoint. The features covered in this examination embody the type of the building itself, the nature of the construction, the introduction of cut-offs and fire separations, and an analysis of the private fire protection that is proposed. On almost every occasion practical suggestions are made by the insurance engineer which will make the risk better from a fire insurance standpoint, and which suggestions in a large majority of cases do not increase the cost.

Drawing of Contracts

In order that the owner's interests may be properly safeguarded, it is not only advisable, but necessary, that all contracts for construction work and particularly fire protection and electric lighting and power equipment, shall be so drawn that all work of the kind is made subject to the inspection of the representatives of the insurance authorities having jurisdiction, and that such work must be made satisfactory to the insurance engineers before it is finally paid for.

Inspection During Construction

It is the practice to make frequent inspections of a property in course of construction to ascertain if the work is going along satisfactorily, and on some occasions tests are made during construction before the work is covered up. This method is quite necessary in the case of testing the underground piping system, as such tests should always be made before joints are covered, in order that

leaks may be readily discovered and promptly repaired. Another feature of especial importance which can be looked after during the construction is the matter of fire doors, which can be examined while they are being made, so as to see if they are being constructed in full conformity with the rules as regards the manufacture of the wood core and also the method of tinning.

Final Tests

When the building is completed the final test and inspection is made to ascertain if the work is in accordance with the contract and conforms to fire insurance regulations and withstands the necessary tests.

This examination should be very exhaustive, because subsequently there will never be such a favorable opportunity to test it, and when an equipment has been tested once and accepted that fact is used many times as an argument to object to a further extensive test later on. The experiences of inspectors during such tests and the result of their work and the conditions which they find on some occasions are surprising, and in some cases astounding. Steam pumps have been found with tools in the steam chests or cylinders; valves have been found with obstructions in them which practically stopped the flow of water, and many times we have come across stones, blocks, gloves, overalls, and other pieces of wearing apparel which have collected in the bottoms of hydrants.

Quarterly Reinspections

While it is reasonable to feel assured that an equipment is reliable, provided it withstands the above tests, it must not be neglected or permitted to deteriorate, but regular inspections should be made as frequently as once every three months, and these examinations, which are known as reinspections, should be almost as thorough and ex-

haustive as the original test. One cannot tell when a weak spot will develop in a fire protection equipment, and for that reason most careful watch must be kept of it. Cases have been known where underground valves which when installed appeared to be satisfactory have deteriorated to such an extent that it has become necessary to have them replaced, the faulty construction, however, not developing until after some years of service.

The Little Details

One of the hardest things that an inspector has to do is to convince an assured that some little change, or adaptation, or improvement, is needed in his particular risk to correct certain conditions which have existed for years and years, but which have occasioned no trouble, and yet the records of the inspection bureaus will show many cases where trouble has resulted due solely to the fact that some of these very same deficiencies have existed without correction. Thus the failure to brick in around a small pipe hole opening in a fire wall, as recommended by an inspector, has permitted fire to spread into an adjoining section and cause extensive damage. Failure to install one automatic sprinkler, suggested by the inspector, in a little dry box, caused thousands of dollars loss a few years ago. The lack of proper shutters around a shaft hole opening in a wall, although a suggestion had gone forward many times before regarding this opening, allowed a fire to spread into a mill with the result that what should have been a small loss became a very large one.

Many other actual cases are on record where the failure or delay in adopting some inexpensive suggestion made by an insurance inspector has been the cause of a serious loss. The property owner should bear in mind that the inspector in his examination of hundreds of different risks every year is gaining knowledge about conditions

and possibilities that no other man has the opportunity to acquire, and too much stress cannot be laid upon the need for promptly adopting suggestions which are the result of practical experience thus secured.

Testing of Hose

In some inspection departments it is the custom to test *all* of the hose on premises once every year at a good working pressure. It was found under the old method that many times the same length of hose would be tested from year to year, and a lot of hose would lie in the hose houses or on the reels which had not been touched for a number of years. The life of hose is prolonged by using it occasionally, and it is much better, of course, to find out that hose is poor—if such is the case—before the fire.

Supervising Connections

Another detail to which inspection work is now carried is that of the supervision of connections when extensions are made to a fire protection system requiring the water to be shut off. On such occasions a representative of the insurance interests is sent to the risk to see that the work proceeds in such manner that in case of trouble water can be again turned on with the least possible delay. This necessitates providing wooden plugs and possibly clamps, providing extra watchmen to patrol the property while the water is shut off, stationing a man at the valve which is closed, with instructions to remain there continuously, so that in case of trouble he can turn the water on at once, and of seeing that the work of making the connections is carried on expeditiously

Co-operation

In addition to the regular inspections maintained by the representatives of the insurance interests, it has been found to be extremely advisable to prevail upon the assured to inaugurate a system of what is called self-inspec-

tion, which calls for regular inspections of the property by the assured's representative, usually the master mechanic or one of the private fire department officials. This inspection work varies in its completeness, according to the size of the risk, and in some of the larger plants is carried out so thoroughly and elaborately that the regular inspections by the insurance interests could undoubtedly be eliminated without any danger of the risk deteriorating.

While this work is done at stated intervals, ordinarily once a week, the greatest possible good can be accomplished if the owner, the chief executive or some other high official, will take the time occasionally to go through the property from beginning to end. The moral effect among the employees cannot be overestimated when they see the owner of the plant on the alert with regard to fire.

The attitude of the property owner is finally the determining factor in successful fire prevention. The insurance interests may advise wisely, the architect may design safely, the contractor may build honestly, but the whole fabric thus put together, with the best that is in these men, will fall unless the owner of the property will carefully and systematically do his part in caring for the risk. Without his help and assistance the building will deteriorate, the fire protection become disqualified and the whole structure fail when the test comes.

From all that has gone before, a general idea may be obtained of the scope of fire prevention, the field of work and its mission in a material or commercial way.

There is another feature which outranks and overtops all other considerations, namely, the protection against fire of that which is most sacred of all—human life. We have become accustomed in this country to so many horrors of fire, involving the destruction of life that we have hardly come even yet to a point where we are affected beyond giving mere passing notice to such occurrences.

At any rate we have not taken a sufficiently serious view of these happenings to take decisive steps to prevent them. The burning of the General Slocum, the Iroquois and the Boyertown theater holocausts, and the Collingswood school disaster bear terrible testimony to the power of the flame and the failure to use known methods of safe construction and occupancy, fire prevention and protection and careful and thorough and systematic inspection.

Should a serious fire occur in a crowded assembly hall, or department store during the busy holiday season, there is opportunity for another terrible disaster in anyone of our cities, and the thought of such an occurrence should impress upon us forcibly that no construction is too good, no prevention too careful, no protection too thorough and no inspection too painstaking where such important considerations are involved.

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(See "*Special Risks and Inspections*" and "*Fire Prevention by the Public*.")

CHAPTER XIII

FIRE PREVENTION BY THE PUBLIC

EDWARD F. CROKER

PRACTICAL fire prevention, while it is still in its infancy, shows promise of becoming a "husky" child and for this we are largely indebted to that "voice of the public opinion," the national press, and the magazine publications which have taken up the matter with vigor. The great difficulty so far, has been to bring home to the mind of citizens and business men the necessity of adopting and putting into effect the practical application of fire prevention. The ordinary business man, when the matter is brought to his attention, invariably seeks to ascertain "how much reduction in insurance will I obtain," and the average house owner or dweller, while apparently interested will often respond, "I am very much interested and will look into the matter 'manana,'" and then the to-morrow fades away in dim mist of forgetfulness. The need of the hour is mandatory legislation by the law-making bodies, creating drastic laws and inflicting heavy penalties for non-compliance, and the vigorous, unrelenting enforcement by the proper authorities of the statutes. At present we have no department of government devoted to the matter of fire prevention. Our laws on the subject are not specialized to completely cover any particular building or business, although they could and should be made broad enough in their general application to go a great way toward partly solving the problem. If we are to better conditions we must realize that "fire-proof" is not "fireproof" as it is understood to-day. The literal definition remains, but many crimes have been committed in its name. I know of no more abused word.

There is only one principle to fireproof construction, be it either homes, hotels, office buildings, theatres, apartments, battleships, railway cars or what not. To have fireproof buildings, architects and owners must throw aside precedent and eliminate entirely the use of combustible and semi-combustible materials in their construction. Wood, even to the size of a lead pencil, should not be used in the construction or finish of any building exceeding a ground area of 25 x 50 feet or three stories in height. If there were still an absolute necessity for its use; if it could not be replaced with steel, as it has been in many modern constructions, it would then be well to attempt to conceive something better. Wood should not be used in any form and the law should prohibit its use. Wooden floors, wooden window-frames, doors and casings burn and help other things to burn; wooden trim and bases burn—everything that is made of wood burns and helps the fire to spread. Eliminate wood—remove the cause—and you have precluded the possibility of fires.

Federal Department

The United States Government should establish a department or bureau, founded somewhat on the lines of the pure food law, for the purpose of establishing laboratories, the business of which it should be to test and to classify the various materials used in the construction of fireproof buildings in order that the public may be provided with a sane schedule of standards of known safety—standards which shall be accepted by all departments and authorities in this country; and the law or laws necessary to make these conditions possible should be enacted with the idea constantly in mind that the present so-called fireproof building is such, only so far as its exterior is concerned, and that legislation is needed and demanded by the public to insure adequate and proper protection to the lives of all persons who may be

called upon to congregate in buildings of a public or semi-public nature.

Under the majority of the present building codes so-called fireproof buildings are substantially fireproof in the sense that a conflagration rarely does serious injury to the building itself. The flames may rage from room to room and floor to floor; floors, doors, partitions and all interior fittings may char and be consumed; the contents may be destroyed throughout and some or many of the occupants lose their lives, but the four walls and framework, that is, the organic structure of the building, usually comes through the fire intact. It is the combustion of contents, not damage to the buildings themselves, that makes fire losses in the United States so heavy in proportion to the amount spent for new construction. The need, therefore, is not for ordinance requirements which will make the buildings more effectually "fireproof," but enactments which will protect the inmates and contents of buildings by making it impossible for a fire once started to course, virtually unchecked, from room to room and floor to floor of a building whose walls are "fireproof." In other words, "death-proof and conflagration-proof" construction are necessary requirements for new compulsory legislation for "fireproof construction."

Changes in Construction

Another element of kindred significance that should be taken into account is the fact that under present day conditions of industrial employment and also very often under metropolitan conditions of residence in buildings housing large numbers of people, fire escapes and means of exit cannot, as a practical matter, be provided which, in the face of flames which preclude the use of elevators and perhaps also the stairways, will certainly afford to all the occupants of a modern building the means of im-

mediate and safe descent to the street. Still less impossible is any saving or safeguarding of valuable contents of burning buildings by means of their removal to the street or adjacent buildings. Future construction must be so required that the starting of flames in one room of a building need not make imperative the instantaneous exit therefrom of all persons employed in the building, or even on the floor where the fire starts. Means of safety, for both persons and property, must be secured, in the building and even on the floor where the fire starts, by making impossible the instantaneous converting of elevator shafts and stairways into flues for the flames, and by making impossible the rapid spread of flames from room to room and floor to floor. Nothing could be more dangerous, more expensive, or more unnecessary, than the idea that the safety of workers in factory and loft buildings can best be secured, or can be secured at all, by providing means of rapid exit to the street. The cost of the kind of fire escapes and the additional stairways properly required, as well as the considerable space occupied by such devices, would make them almost prohibitive in expense, even if practicable or effective, which they could not be.

Even if, however, all the occupants could be got out safely and in time, no reason appears why the contents should be left to the mercy of flames coursing from room to room and floor to floor until checked by the activities of the firemen. Both persons and property should be afforded protection in the building, by making its construction really fireproof, that is death-proof and conflagration-proof, thereby confining the flames to a limited area within which to burn themselves out, consuming only such contents as are not removed to safety behind doors and partitions as completely fire-resisting as the walls themselves.

One great lesson which many recent fires in New York

and elsewhere have taught, is that no building is more fireproof than its doors and windows, while the presence of wood in trim or casing anywhere lessens, to that extent, the fire-resisting and fire-confining power of the structure. No matter if the walls are fully fireproof, doors of wooden construction permit the flames to sweep from room to room and floor to floor, instead of being confined to one room, as is possible in fireproof buildings in reality—not “fireproof” in name only.

How often it is true that hotels, theatres, apartment buildings, and the like, are advertised as “fireproof” throughout, only to have some fire disclose that the buildings were veritable “fire traps,” the fireproof construction of the walls, floors and even stairways making only more perfect flues for the rapid combustion of tinder-like doors, partitions, window casings, trim and room contents! Those who go into hotels and halls should have protection and assurance that representations of fireproof construction are in reality well founded.

Safeguards

Every building should have straight, broad stairways of fireproof construction, and every door and partition, no matter how small or how temporary, should be fireproof. Right here I want to say that by the term “fireproof” as applied to metal doors, partitions, and all other interior work of buildings, I do not mean slow-burning, near-fireproof, or any of the other so-called makeshifts which are used in many instances.

One of the most notable fires in the history of New York was the Singer Building fire in the fall of 1911. Combustible material in a room on the twenty-sixth floor of that structure caught fire on the morning of September 29th, and was a mass of flames when discovered. The incipient conflagration was, of course, far above the height at which firemen could work effectively, and if the build-

ing had not been really fireproof the structure would have become a giant chimney through which the flames could have coursed and destroyed at will. This building, however, was completely equipped with hollow steel doors and trim throughout, so perfectly enameled and grained that even an expert in wood could only detect their true composition by sounding the trim with a metallic substance. The result was that the fire practically burned itself out in the room in which it started, before the arrival of the fire department. Accordingly, this fire was more notable, not for loss of life and property, the disastrous consequences for which fires are usually notable, but for the absence of such disasters which were prevented by complete fireproofing.

To me there is a fascination about steel interiors. It constantly emphasizes the absurdity of fire-fighting, for how can fires rage if they have nothing to feed upon? Before writing this article I had occasion to inspect one of the hollow steel doors from the Singer Building fire. If every building were constructed in this manner and made absolutely fireproof the appropriations for the maintenance of fire departments could be greatly reduced.

Building a Home

Within the next year I expect to build a home. Some of my friends await the result with interest, expecting a freak. Quite the contrary. I am going to have it absolutely fireproof, without having to make excuses for the term fireproof. It is going to be far more artistic than even the old tinderboxes. I am not going to spend a fortune on it, either, for the slight additional expense in eliminating wood will be comparatively insignificant and will prove a perpetual asset in the long run. Just to demonstrate that my fireproof ideas can be carried to homes I am going to fire my house as soon as it is completed and prove conclusively that it will *not* burn, simply because

it *cannot*. My ideas in this connection are not the result of a theory, but are founded on an experience covering a period of more than a quarter of a century. While it may seem a hardship for owners to be compelled to construct absolutely fireproof buildings, in the end, the resultant savings will more than justify the additional cost.

In the construction of frame dwellings outside of the "fire limits," the wooden shingle should be absolutely prohibited. An asbestos shingle is far superior and as easily obtainable. There is also on the market a positive fire-resisting paint which will prevent, in great measure, fire extending from one building to another from exterior exposure. The building limits for commercial and residential purposes should be extended as far as possible; construction of frame buildings should not be allowed in a city proper.

Moral Phase of Problem

The enormous waste due to deliberate arson is a phase of the fire problem that heretofore has been very lightly touched upon. I believe (and am concurred in by no less an authority than Mr. Louis S. Amonson, President of the People's National Fire Insurance Company of Philadelphia, who has made a thorough study of the question for many years) that the moral hazard is responsible for a very large percentage of the fire loss throughout the country, and this can never be remedied unless we take the ground they do in France and other European countries, that every fire is a crime against the state and that every individual must be held personally responsible for gross carelessness resulting in loss of life and property. If (as Mr. Amonson has often said) "the locomotive of a railroad company through unprotected smoke-stack, scatters live coals along the right of way, causing fires, the company is compelled to pay for the damage done, and millions of dollars have been paid by the railroad com-

panies because of carelessness in this respect to individual property owners who have been injured." The individual should be held to just as strict accountability as a corporation. Still it is too true that there is a general failure to identify and hold responsible the individual causing fires. A cigarette butt thrown carelessly into cotton clippings is supposed to have caused a recent and appalling loss of life in New York, but no real attempt, as far as I know, has been made to identify the person and punish him for wholesale manslaughter. He is evidently still at large and at liberty to throw more cigarette butts where additional lives will be sacrificed. There should be an immediate police investigation of every fire, large and small, and if a property owner through gross carelessness permits a fire to occur on his premises, he should be made to pay a large part of the apportioned expense of turning out the fire department, which should not be saddled on the general body of taxpayers who are more careful in this respect. This is the rule in Germany; and Berlin—with about the same population as Chicago—in consequence of the rigid investigation of fires, has a loss ratio of less than 5 per cent. of that of Chicago. In the German city the idea of personal responsibility has been inculcated for years and every property owner knows that, if a fire occurs, he is to deal with the representatives of the police and not with a lot of spineless insurance companies.

In this country fires for profit are entirely too common, and there are undoubtedly persons who make a business of incendiarism. The head of the recent arson trust testified not long ago in Chicago that, since the first of January, they had succeeded in starting more than 100 fires, causing a loss of over \$1,000,000. While fireproof construction is important, it is even more important not to have fires, and in the old countries of Europe frame buildings have stood for hundreds of years because rea-

sonable care is exercised in avoiding the causes that lead to fires. As the editor of *McClure's Magazine* said in an able editorial in a recent issue, "It is becoming a serious question whether the American nation is not becoming a nation of crooks or a nation of children playing with matches, and while 99 per cent. of the population is honest, the other 1 per cent., through carelessness, ignorance or deliberate dishonesty, is responsible for all the fires that occur." There is no use in closing our eyes to the fact that it is entirely too common for the merchant and manufacturer that becomes hard up, to have a fire in order to meet his obligations. It is much easier than the process of going through bankruptcy, whether voluntary or otherwise, and more profitable if he gets away with it. I am informed that Mr. Hines, of the Underwriters' Protective Agency in New York, has a record of over one million fires that have taken place in the last thirty years, and he is reported to have said that there is one individual who has had nineteen successful crooked losses in different parts of the country under various incorporated names. He starts a lumber yard in a town, secures twice as much insurance as he is entitled to, has a successful fire, and immediately removes to another town to duplicate the operation under another name. When proper agitation can arouse the public on this one point, I believe a remedy will promptly appear through the enactment of proper laws. The individual who, through ignorance, carelessness or dishonesty, permits fires to occur, should not be coddled or made the object of sympathy but held to a strict personal accounting and made to pay for the damage done, whether to his own property or to that of others.

At this time when the "conservation of natural resources" has become a national issue, and from coast to coast the nation is taking steps to prevent unnecessary waste, it is inconceivable that so little has been done to

lessen the annual waste of nearly \$300,000,000 caused by fire.

Disturbing Figures

The loss shows an average of \$2.51 per capita and when these figures are compared with the average per capita loss from fire in Europe of 33 cents, it will be recognized that there is something radically wrong. Since 1880 the population has increased 73 per cent. and during the same period fire losses have increased 134 per cent.

In view of this rapidly increasing hazard and the magnitude of a yearly loss of nearly \$300,000,000, the public interests are aroused and actively at work laying plans to reduce this heavy tax on all property owners.

It is conceded by leading fire protection engineers that at least 90 per cent. of all fires *could be controlled at minimum loss if they were discovered while in their incipency*; this great loss resulting mainly because delay in discovery allows a small blaze to become a conflagration and beyond private control. It would seem simple to be able to supply means to remedy this great defect and to laymen it must seem surprising that with all the scientists and experts we have, nothing has been devised to perform this service. While easy to imagine such a system, it has been a constant puzzle to solve the problem. A reference to the patent office records of 1910 and 1911 shows the issuance of over thirty basic patents issued to cover an aggregation of inventions known as the "Air Alarm"—something which promises at last to provide the needed devices and apparatus to place in all properties an automatic fire detecting system which, if generally employed, will be the first great step toward reducing our fire loss, to say nothing of the saving of life.

Fire Detection Scheme

Examination of the patents and systems shows a fire detection scheme wonderful in simplicity and marvelous

in operation, using a new principle—that of the very air heated by the fire causing the alarm to be sounded. It is simple to install, there are no moving parts to wear out, is reasonable in price, barely noticeable when put up and a silent watchman ever ready to detect a fire automatically almost immediately, no matter where the fire is or how small it begins. I have witnessed very extensive tests made in various installations in operation among government and railroad properties, and am informed that the Fire Underwriters Laboratories have made exhaustive tests covering a period of six months and have given an endorsement and approval of its effectiveness. The system consists of a small copper tube hardly larger than the lead of a pencil tacked upon the ceiling of the floor or building to be protected. This tube, after running around the ceiling, ends in a diaphragm box. The tube, being hollow, always has air inside. It follows if the air in the room is heated, this air in the tube will heat and expand, pressing on the diaphragms. As there are relief vents leading to the atmosphere attached to the diaphragm box, any expansion of the air inside of the tube caused by the heat from registers, lights or grate, in the home or office, does not move the diaphragm enough to send in an alarm as the vents relieve the pressure before the alarm goes in from local causes, but if a blaze starts the heat waves rise at once and spread through the space striking the tube and causing the air in the tube to expand very rapidly, far beyond the relief capacity of the vents; the diaphragm then bends out, making an electrical contact and the signal is sent to the office or engine room telling where the fire has started; simultaneously bells ring on every floor notifying the employees to leave the premises.

At the same time the floor number is struck out on large gongs for general identification and the building

number of the fire box is sent direct to fire headquarters calling the fire department to the scene.

As all of this happens from ten to thirty seconds from the start of the smallest blaze and all these remarkable results are obtained automatically with apparatus of great simplicity, it would seem that at last our inventors have discovered a means of controlling our heaviest national waste and preventing a repetition of the heavy loss of lives sustained in recent fire horrors in this country.

The Economic Side

At the present time it is apparent we are fighting fires from the wrong end when we spend millions yearly to equip and maintain a fire department and a few thousands of dollars to prevent fires. Fifteen hundred people lost their lives and 5,500 people were injured last year by fire in the United States, with as stated above, a property loss of nearly \$300,000,000. One-half of the value of buildings constructed in 1910 was destroyed by fire. Our fire departments, their personnel and equipment, are admittedly superior to those of Europe, yet the insurance rates in Western Europe are about one-tenth as much as in the United States and the per capita fire loss less than one-tenth of the per capita fire loss or waste in the United States. When insurance companies are forbidden by law to adjust any claim, whether doubtful or not, until after a proper investigation by competent authorities, I firmly believe there will be a decided drop in fire losses.

Adoptions of resolutions suggesting campaigns of education through the governors of states, insurance commissioners and fire marshals for the purpose of bringing directly to the attention of the people the causes for the national ash heap, and the adoption of legislation which will safeguard the lives and property of the people by holding *every* individual responsible for carelessness resulting in fires; the setting apart throughout the coun-

try of a "Fire Prevention" day, with the holding of appropriate exercises in the public schools and necessary instruction on the common fire hazard given to children and the abolishment of the deadly "parlor match," are all steps in the right direction, and should be taken up by members of all public spirited bodies.

Practical Suggestions

While waiting for the public to be fully aroused to the great necessity of stringent statutory provisions regarding fire prevention, the following practical suggestions, if carried out, would undoubtedly be great factors in the prevention of fire and consequent loss of life and property:

Modern and scientific automatic fire alarm systems and automatic sprinklers should be installed wherever practicable.

Ashes should be kept in metal receptacles; never in paper or wooden boxes.

Oily rags or waste should be kept in standard metal waste cans and the contents removed and burned each night.

Rubbish should never be allowed to accumulate in buildings.

Spittoons should be made of metal and never contain sawdust or other combustible material.

Gasoline, naphtha and other volatile oils should not be kept in a building.

Gas brackets should have rigid fixtures; where necessary to use swinging brackets all exposed woodwork should be protected with sheet metal, leaving an air space. Metal bells should be placed over gas jets on low ceilings.

Steam pipes should be kept clear from all wood and other combustible material.

Open fire holes should be protected with sheet iron, or better, be bricked up.

Electricity, when improperly installed, is hazardous; see that your certificate of approval covers the entire installation; lamp cords should not be hung on nails or wrapped around any piping; paper shades should never be used. Confer with an electrician when changes are contemplated. Do not allow employees to tamper with electrical installation.

Stove pipes should be run direct to brick chimneys and never through floors or partitions; protect floors under and about stoves with brick, cement or sheet metal.

Stairways should be kept clear at all times; never place any stock or shelving on stairs.

Aisles of good width should be maintained at all times; never pile stock in front of windows or against doors, as it handicaps the firemen in event of fire.

Fire doors and shutters should be closed every night, and stock should never be placed so as to hinder the ready closing of these fire stops.

See that all fire extinguishing apparatus is in good order.

Paper or rags saturated with printers' ink will produce spontaneous combustion.

Damp lamp black will spontaneously ignite. So will slack and pulverized coal and charcoal when wet.

Parlor matches—never use them; always use the safety matches—they cost no more.

By requiring all doors to swing outward, especially in public buildings, the loss of many lives may be prevented.

All buildings, three stories in height or more, should be provided with fire escapes and standpipes for fire department use.

Compulsory fire drills in all mercantile houses, factories and institutions employing or containing more than twenty-five persons; the organization of such employees

or persons into fire brigades, with proper instructions how to use the fire appliances and what to do in case of fire, will avert or minimize many fires.

The employment of retired firemen, in uniform, to patrol premises and inspect fire appliances, to note conditions of premises as to being free from rubbish, waste materials and other inflammable matter likely to cause or promote fire, is wise where risks are large.

Smoking in factories during working hours to be positively prohibited and any offender severely punished.

Kerosene oil always to be kept in safety cans, so that if upset, the oil will not leak out and be likely to cause a fire.

All private houses to be equipped with small fire extinguishers.

Modern Equipments for City and Town Fire Departments

Vigorous strides and rapid movements have been and are continually being made in the addition of fire appliances and machinery for fighting fires for the extinguishment of fire and the diminution of the fire loss.

The early or ancient method of fighting fires that threatened to become conflagrations was to remove the buildings in the path of the fire by tearing them down, thereby cutting off the support or sustenance of the flames, and this method has survived to some extent by the use of gunpowder and dynamite in blowing up houses in many notable fires. As far back as the year 150 B. C. is credited an invention of a "fire wheel" with a force pump for fire purposes. In the first century a machine is mentioned in the nature of a pump operated by hand levers. Syringes and squirts (probably used in ancient times) were continued down to the end of the eighteenth century. Water bombs consisting of a sphere or case of clay, containing water with a charge of gunpowder

arranged with a fuse were also used. When the bomb was thrown into a fire, like a hand grenade, the bursting of the bomb would scatter the water all about, somewhat on the plan of our present automatic sprinkler. In 1657, an inventor of Nueremburg, Germany, invented a pump or engine with levers, worked by twenty or thirty men and capable of delivering a good stream of water to a height of eighty feet. This apparatus was improved upon by adding flexible leather pipes for the intake and discharge, the forerunner of the present woven hose, giving a machine like the handbrake engines which were in general use up to the introduction of steam fire engines in the nineteenth century.

The equipment of a first-class modern city fire department would, no doubt, be a source of wonder and amazement to the volunteer "fire-fighters" of the olden times, but even today the demand for improvements and additions in our fire equipments is taxing the ingenuity of inventors and fire apparatus manufacturers.

Fire department statistics compiled by the Municipal Journal in its issue of September 20, 1911, present an interesting array of facts and figures regarding fire alarm telegraph systems, fire apparatus, fire hose, fire alarm boxes, number of paid and volunteer firemen, etc., and also disclose the fact that there has been little or no attempt made to adopt a standard average equipment for our various towns and cities in this country.

A city fire department should possess above all other things the most approved fire alarm system, with the best up-to-date standard fire alarm boxes that can be procured. This is the right arm of the fire service. The placing of wires for fire alarm service underground is a prime requisite. Overhead wires are a nuisance and a fatal defect to a perfect service.

A sufficient number of officers, engineers and firemen are required, and the mistaken economy of cutting appro-

priations until sufficient men cannot be employed, has done most serious injury. The selection of firemen is a most important and vital matter. The reduction of the height and weight of men for the fire service and the substitution of greater clerical knowledge by the various civil service boards has been a step in the wrong direction. As long as water is the chief extinguishing factor, brawn and muscle are the most important requisites. Knowledge is indeed a splendid thing to possess, but the college professor would cut a dismal figure at a fire working alongside of a husky longshoreman, who was intelligent enough to grasp ordinary facts and obey orders and who possessed the physical ability, which is absolutely necessary, to enter a burning building, charged with smoke, heat and flame, and to remain there with his nozzle until the fire is subdued. And my experience has shown me that educational qualifications invariably give way to brute strength on such occasions.

Fire boards through lack of proper appropriations are often compelled to purchase cheap and inferior apparatus instead of buying the very best the market affords, and which has always proven to be the cheapest in the end. To maintain a first class department you must supply it with first class tools. What good is cheap hose when it bursts at fires, causes delays as well as injuries, and permits fires to spread? What advantage to purchase heavy, cumbersome and antiquated steam fire engines, thereby losing valuable time in reaching the scene of a fire, and then not doing efficient work when placed in service at the blaze?

The fire chief should pay a great deal of attention to his water supply. Let that be inadequate and the finest apparatus and best of firemen are helpless at a fire. The installation of high pressure systems in various cities has been the most important advancement made in fire fighting in many years, and too much cannot be said for

its use. Where it is not possible to install a high pressure system, then sufficiently large water mains, and modern up-to-date fire hydrants should be installed, and proper care and attention be paid to their condition.

The adoption of the automobile combination chemical engine and hose wagon, particularly for suburban and outlying districts has been a notable improvement to the fire department equipments. The gasoline pumping engine, in my opinion, is still in an experimental stage and is still subject to improvement before it can be recommended for general use.

An efficient fire department should, first of all, be organized on sound and firm lines. The fire commissioner's powers should be limited to the executive end of the department, with a general supervision, but the discipline of the uniformed force should rest entirely with its chief. An incompetent or dishonest fire chief can easily be dismissed for neglect, inefficiency or failure to properly perform the functions of his office, by proper charges being brought against him and the case proved, but the fire commissioner too often is only in the department a short time and does not have a full opportunity to grasp the actual requirements or even to become thoroughly acquainted with his subordinates in the uniformed force. The chief of a department should have concurrent power with the commissioner, and his recommendations should be a matter of statutory right in the appointing of firemen, their promotion, transfers and assignment, and in the selection of fire appliances and apparatus with which to extinguish fires. He is always charged with the responsibility of extinguishing fire with as little loss as possible by water or other agency, and should, therefore, have a voice in the selection of the men and implements—without which no fire can be successfully combatted. When there is failure to do this, the fault is always laid at his door, whereas the fire com-

missioner having sole power and authority is the person really responsible.

The book of rules in the department for the guidance of its officers and men should be based on a semi-military form of organization, and the power to punish men for infractions of same should be left with either the fire chief or a trial board composed of uniformed officers of the department who know the men, understand what is expected of them, and are not as a rule susceptible to either social, political or religious influences.

A fire department should be apportioned into as many divisions as necessary, according to the number of companies, men and the amount of apparatus, with an assistant chief or deputy chief in command; in turn this division should be sub-divided into battalion districts, each containing a proper number of companies, with a battalion chief in command, and fire companies should consist of a foreman or captain, assistant foreman or lieutenant, two engineers (in the case of engine companies) and twelve firemen. This should be the minimum number in large cities, as when days off, times for meals, sickness and injuries are taken into consideration, it generally leaves but one officer and five or six men to man a company at a fire, which is hardly sufficient, as in fighting a fire it is always necessary to have a sufficient force of men on hand at the start of the fire to properly extinguish it with the least possible property loss. Every officer and member of a company, as well as the deputy chief and chief of battalion should have a thorough knowledge of each and every building within their districts, and at least twice a year they should be charged with the duty of inspecting such premises and making suitable recommendations for the purpose of preventing fires occurring, and reporting any and all violations found to exist. A full knowledge of the kind and size of the water mains and location of fire hydrants, with proper care

of the latter, is indispensable. This requirement also applies with equal force to a knowledge of fire alarm boxes and in fact everything pertaining to fire matters in the district.

Newly appointed firemen and officers newly promoted to higher ranks should be made to serve at least two years in the busiest districts, and this should be strictly insisted upon, for in no other way can they gain experience in fire fighting actually necessary to make a first class fireman or officer.

A fire house should always be kept as clean as possible and committee work should be fairly apportioned among the different members. Favoritism shown to members and lack of cleanliness in an apparatus house destroys discipline and with it the *esprit de corps* necessary for the maintenance of an effective fire department.

The book of rules should be amended as little as possible; printed forms for various reports are essential; the use of the typewriter in the making out of such reports is to be encouraged, as too much clerical work is continually being imposed upon our firemen. With the continual additions and amendments and changes in the laws, rules and regulations, the "engine house lawyer" has become almost a necessity.

The detailing of members of the uniformed force to positions other than performing actual fire duty is one of the very worst features in our departments. It creates dissatisfaction, causes hard feelings and enmities, and is really a violation of law. Firemen as a rule are not capable of performing a civilian clerk's work; the cost of detailing a fireman is greater than employing a clerk and the result less satisfying, to say nothing of the hardship on the other members of the company who are saddled with additional work that should have been performed by the absent member.

From my experience in the fire department for twenty-

seven years, twelve of which I spent as the head of its uniformed force, coming in daily contact with civilians as well as uniformed employees, I feel sure that if the improvements herein mentioned were made, political favoritism eliminated, strict discipline maintained, and adequate salaries paid to firemen to compensate them for the great number of hours they are compelled to stay on duty, with little opportunity of living with their family, a first class fire department could readily be organized and maintained in every town and city in this country, and that this would greatly benefit and further the work of "Fire Prevention" now being agitated.

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CHAPTER XIV

MARINE INSURANCE¹

BY BENJAMIN RUSH

MARINE insurance may be said to be an elder brother of fire insurance. It has been in existence so long that its origin is lost in the mists of history. The earliest case reported in England is one mentioned by Sir Edward Coke in 1589 and it refers to marine insurance as to a practice already well established.

The best evidence obtainable tends to show that marine insurance sprang up as an adjunct to the great revival of commerce, which took place in the twelfth and thirteenth centuries, among the flourishing Italian republics, which had arisen from the ruins of the Roman empire and was introduced by them or their agents into almost every country of Europe.

At this time there does not appear to have been any law of marine insurance promulgated, and the contract of insurance was accordingly regulated by mercantile custom, which custom subsequently became the foundation of all laws enacted upon the subject.

The practice of the courts, in relation to marine insurance, continued to be more or less desultory until Lord Mansfield became chief justice of the Queen's Bench in 1756.

This distinguished jurist made a special study of the policy, drawing from the old sea laws, the foreign ordinances and the usages of the trade those principles, which, under his arrangement were to form the nucleus of insurance law.

In so doing he was greatly helped by a body of rules

¹I wish to express my indebtedness to McArthur's "Contract of Insurance," Mr. Phillips's "Text Book on Insurance" and to Mr. Gourlie's "Work on General Average," to which I am indebted for many definitions and much of the information contained in this article.

for the conduct of business, which had grown up in England, and were known as Usages of Lloyds, the origin and growth of which is of interest.

A long time after the formation of Lloyds and other individual underwriters, corporations were formed to transact the business of marine insurance; the first two companies formed in England being the "London Assurance Corporation," and the "Royal Exchange Assurance Corporation," both well over 100 years old.

Prior to the independence of the United States, in the early days of the colonies, resort was had by merchants desiring insurance to private underwriters of Great Britain, and early mention of London underwriting upon American business is found in the Penn & Logan correspondence.

The trade of the colonies at this time was necessarily small and there were few inducements to establish underwriting agencies whether by Lloyds or otherwise until the seventeenth century, when various associations of local capitalists assured each other against risks and perils of navigation and sea traffic, generally under associations more or less similar to that of the Lloyds Underwriters of Great Britain.

These associations were mostly local in character and dealt with insurances originating at or near by the places where the private underwriters resided.

We find mention of such private underwriters being in existence in 1721 in Philadelphia and there were doubtless similar associations in existence in Boston and New York at or about the same time.

By the middle of the eighteenth century these associations had increased in number and in financial strength, and transacted a substantial proportion of the maritime business of the colonies.

After the Revolution the maritime commerce of the United States increased rapidly and in response to the

demand for the greater security offered by strong associations in protecting the greater values at risk against maritime perils, sundry merchants and capitalists secured charters of incorporation from the various state legislatures; among the earliest marine insurance companies chartered in the United States being the Insurance Company of North America, the Insurance Company of the State of Pennsylvania, and the Providence-Washington Insurance Company, all of which are still in existence.

As the commerce of the United States increased, so did the number of marine insurance companies increase with it, and by the middle of the nineteenth century, at which time the United States mercantile marine, engaged in foreign trading, was equal to that of Great Britain, the number of American marine insurance companies was very large, most commercial cities having organized one or more maritime insurance companies to take care of their maritime adventures.

After the Civil War and incident with the substitution of iron and steel for wood as a material for ship-building, the foreign trading mercantile marine of the United States declined rapidly and the American marine insurance companies declined with it, doubtless other additional causes co-operating to bring about this result.

The values carried by steamers were greatly in excess of those carried by sailing vessels and the establishment of rapid lines of steam packet ships, and above all the completion of the present Atlantic telegraph cable, facilitated the placing of insurance in companies other than those in the United States, but whatever be the prevailing cause the fact remains that during the last half of the nineteenth century the large majority of American marine insurance companies retired from business or were absorbed by more prosperous rivals, so that there

N^o 201 *Insurance Company of North America*

Whereas *John Leamy*

as well in his own Name, as for and in the Name and Names of all and every other Person or Persons, to whom the same doth, may or shall appertain, in Part or in all, doth make Assurance, and assign *himself* and them and every of them to be insured, lost or not lost, at and from *New Orleans to Baltimore* in *Philadelphia*

upon all Kinds of lawful Goods and Merchandises, to loaden or to be loaden aboard the good *Brig* called the *Baron De Barondelet* whereof is Master for this present Voyage *Donchelon* or whosoever else shall go for Master in the said Ship, or by whatsoever other Name or Names the said Ship, or the Master thereof, may or shall be named, beginning the Adventure upon the said lawful Goods and Merchandises from and immediately following the Loading thereof on board the said *Brig* at *New Orleans* and endure until the said Goods and Merchandises shall be safely landed at *Baltimore or Philadelphia* as aforesaid, and so shall continue as aforesaid. And it shall and may be lawful for the said Ship in her Voyage to proceed and fail to, touch and stay at any Ports or Places, if therein obliged by Stress of Weather, or other unavoidable Accident, without Prejudice to this Insurance. Touching the Adventures and Perils, which we the Assurers are contented to bear, and to take upon us in this Voyage, they are, of the Seas, Men of War, Pirates, Enemies, Privateers, Robbers, Thieves, Jettisons, Letters of Marque, and Counter Letters, Surprizes, Takings, at Sea, Arrests, Restraints and Detainments, of all Kings, Princes or People, of what Nation, Condition or Quality soever, Barratry of the Master and Mariners, and all other Perils, Losses and Misfortunes, that have or shall come to the Hurt, Detriment or Damage of the said Goods or Merchandises, or any Part thereof. And in case of any Loss or Misfortunes, it shall be lawful to and for the Assured, his Factors, Servants and Assigns, to sue, labour and travel for, in and about the Defence, Safeguard and Recovery of the said Goods and Merchandises, or any Part thereof, without Prejudice to this Insurance, to the Charges whereof we the Assurers will contribute, each one according to the Rate and Quantity of his Sum herein insured. And it is agreed by us the Assurers, that this Writing or Policy of Insurance shall be of as much Force and Effect as the surest Writing or Policy of Assurance heretofore made in any of the UNITED STATES or elsewhere. And so we the Assurers are contented, and do promise and bind ourselves, each one for his own Part, our Heirs, Executors and Goods, to the Assured, his Executors, Administrators and Assigns, for the true Performance of the Premises, confiding ourselves paid the Consideration due unto us for the Assurance, by the said Assured, or his Assigns, at and after the Rate of *Two per cent*

And in case of Loss, the Assured is to abate *Two per cent*. ~~and his Loss is to be paid in Three Months after Date thereof.~~ And it is agreed, that if any Dispute should arise relating to the Loss on this Policy, it shall be referred to two indifferent Persons, one to be chosen by the Assured, the other by the Assurer or Assurers, who shall have full Power to adjudge the same, but in case they cannot agree, then such two Persons shall chuse a third; and any Two of them agreeing, shall be obligatory to both Parties.

IN WITNESS WHEREOF, WE the Assurers have subscribed our Names and Sums assured, in *Philadelphia*, the *Twenty Sixth* Day of *April* One Thousand Seven Hundred and *Eighty three*

Memorandum. *Cash, Wheat, Indian Corn, Peas, Malt, and dried Fish, stored in Bulk, and Tobacco in Casks, are warranted free from Average, unless general. All other Goods free from Average under Five Pounds per Cent. unless general.*
The Assured shall allow the Office-keeper or Broker Half per Cent. for his Trouble in collecting any Loss that may happen on this Policy, paying the same in due Time, and registering it in the Office-Books. And in all Cases of Return Premium, Five per Cent. on said Premium to be returned, provided that in no Case it be under an Half per Cent. on the Sum insured. It is mutually agreed by the Parties to this Policy, that no Part of the Premium shall be returned or abated, on account of any Deviation which shall be made by the Owners or their Factors, from the present Voyage.
Excluded free from any Charge, Damage, or Loss, which may arise in consequence of a Seizure or Detention of the Property for or on account of illicit or prohibited Trade.

In case of Loss, such Loss is to be paid in Ten Days after Proof and Adjustment thereof. The Amount of the ~~Premium~~ Note given for the Premium, if unpaid, being first deducted.

This Insurance is declared to be made on Cash.
It is mutually agreed that if the above Cash shall not be shipped on board the *Baron De Barondelet*, but on board the *Brig* *Ceres*, *Andrew Christensen*, Master, the above Insurance shall be considered as made on the said *Brig* *Ceres*, and be equally binding on the Parties as if the *Brig* *Ceres*, and not the *Baron De Barondelet*, had been named in this Policy.

The Assured warrants the above Cash to be American Property.
2000 Two Thousand Dollars for the Insurance Co^y of N^o America
John Leamy

N^o 2000

are today in existence only a few of those which were engaged in business a half century ago.

The tendency to consolidation has been quite as marked in the insurance business as in every other branch of trade, and in the United States today marine insurance is largely transacted by a comparatively small number of marine insurance companies, either domestic or foreign, whose experience and financial strength enable them to offer better facilities to the insuring public than did their smaller and weaker predecessors.

To consider the elements of the contract; marine insurance may briefly be said to be a contract, whereby one party, for a specified consideration agrees to indemnify another, who is interested in property exposed to marine risks, against loss incidental thereto. The instrument by which the contract is made is called a "policy." The person who undertakes to indemnify the other is called the "insurer," or "underwriter," and the consideration which he receives for so doing is called the "premium"; the party protected by the policy is called the "insured" or "assured"; the thing covered by insurance is called the "subject" and the substantial concern which the insured person has in the preservation of the subject is called his "interest."

The obligation assumed by the underwriter, regarded as a whole, is termed the "risk," and the specified dangers, the "perils insured against."

Before proceeding to the consideration of the policy contract it is necessary to recite certain peculiar unwritten understandings which although they do not anywhere appear on the face of a marine policy are nevertheless well known and thoroughly understood in the mercantile business and are enforced by the courts.

The first is that the insurance contract being a contract of good faith will fall to the ground, in whole or in part in the event of fraudulent practices by either party

thereunto and it is, therefore, an implied condition in every contract of marine insurance that the person who proposes a risk to an underwriter shall communicate every material fact which is within his exclusive knowledge to that underwriter, unless the terms of the policy are such as to render such communication superfluous.

He must tell everything he knows which he thinks might influence the underwriter's judgment either to accept or decline the risk or even to increase or diminish the premium charge; furthermore, he must not conceal anything which might induce the underwriter to decline the risk or which were it known might influence the underwriter's judgment in any of the above particulars and it makes no difference whether this concealment results from ignorance or design, it will be equally fatal to the contract of marine insurance.

Another understood necessity of the contract of insurance is that the insured shall have an interest in the subject at risk; he cannot simply bet or wager on the safe arrival of this or that ship if he has no interest in her.

Wager policies as they are called have long since been pronounced illegal and they cannot now be enforced in any court in this country or in England.

Another implied warranty, as it is called, is that every vessel shall be seaworthy before sailing and that she shall pursue her voyage without any undue delay or deviation from any of the established usages of trade or navigation; and finally that the adventure must be a legal one both as regards its business nature and the mode in which it is prosecuted.

Many cases have come before the courts and many books have been written to define just what constitutes seaworthiness; a brief definition is,—thorough fitness in all respects of the vessel named to pursue her voyage to its destination and to encounter the ordinary perils which must be met with in so doing.

Finally, neither the ignorance nor innocence of the assured will avail to relieve him from a breach of this warranty.

Coming now to the form of policy commonly used in the insurance of merchandise you will find that it states that the insurance company insures John Doe, on account of whom it may concern; "In case of loss to be paid in funds current in the United States, to him or his order, lost or not lost, at and from (here follows the insertion of the voyage; let us suppose from London to Philadelphia) upon all kinds of lawful goods and merchandises, laden or to be laden on board the good steamer (let us suppose the New York), whereof is master for this present voyage Smith, or whoever else shall go as master in the said vessel, or by whatever other name or names the said vessel, or the master thereof, is or shall be named or called."

What do these words mean?

In brief English they mean that John Doe is covered in United States currency to the extent of whatever amount of insurance he may agree upon with his underwriter, upon any kind of lawful goods he may have shipped from London to Philadelphia by steamer New York and it does not make any difference who is master of that steamer for that voyage.

Then follows a clause, reading:

"Beginning the adventure upon the said goods and merchandises, from and immediately following the loading thereof on board of the said vessel, as aforesaid, and so shall continue and endure until the said goods and merchandises shall be safely landed as aforesaid. And it shall and may be lawful for the said vessel, in her voyage, to proceed and sail to, touch and stay at, any ports or places, if thereunto obliged by stress of weather, or other unavoidable accident, without prejudice to this insurance. The said goods and merchandises, hereby insured, are valued (premium included) at"

This wording means that the insurance company agrees to assume the risk as soon as the goods are loaded on board the vessel and will hold them covered until they are safely landed at destination and it makes it lawful for the aforesaid vessel to put into a port of distress, if obliged by heavy weather or unavoidable accident without invalidating the policy; frequently goods are insured from the time of delivery on dock, or from some place in the interior, until delivered in the assured's store or warehouse at port of destination. This is done by an endorsement.

Coming now to the question of valuation:

“The said goods and merchandises, hereby insured, are valued (premium included) at.....”

Herein lies one of the principal points of difference between marine insurance and fire insurance.

In almost every marine insurance policy the assured upon taking out the policy and prior to any known loss agrees with his underwriter that in the event of loss, the goods, or subject insured, shall be valued at an agreed amount or valuation.

In almost every fire insurance policy the value of the property insured is left unsettled between the insured and his underwriter so that in the event of loss the value of the damaged property has to be agreed upon between them by mutual agreement or by appraisement after the loss has occurred. The wisdom of this provision is indicated by the fact that in all the writer's experience of twenty-five years in marine insurance he has yet to see a suit between a marine insurance underwriter and his assured about the valuation of goods or other insured property in case of loss, which, in his opinion, is due to the fact that before the adventure is undertaken, the value is agreed upon and that source of friction removed.

The clause following is known as the “Risks and Perils” clause, and reads as follows:

“ Touching the adventures and perils which the said insurance company is contented to bear, and takes upon itself in this voyage, they are of the seas, fires, men-of-war, enemies, pirates, rovers, thieves, letters of mart and countermart, surprisals, takings at sea, jettison, barratry of the master and mariners unless the assured on cargo be a part owner of the vessel, arrests, restraints and detainments of all kings, princes and people of what nation, condition or quality soever and all other perils, losses and misfortunes (illicit or contraband trade excepted in all cases) that have or shall come to the hurt, detriment or damage of the said goods and merchandise or any part thereof.”

Let us take this up word by word as it is perhaps the most important clause in the policy in that it specifies just what risk the underwriter agrees to protect the insured against. Before considering the perils assumed, one by one, it will, however, be necessary to state the rule which is to be followed in determining when a loss which happens in consequence of any specified peril is to be attributable thereto, within the meaning of the policy. It is a settled principle of insurance law that the proximate and not the remote cause of loss is to be looked to in order to determine the underwriter's liability.

The words “ proximate ” and “ remote,” with reference to causation, are expressive of the different degrees of relationship which obtain between cause and effect. The term “ proximate cause ” is applied to that agency by which an effect is directly produced, as, for instance, if a vessel founder in a tempest, the immediate cause of her loss is a peril of the sea. A “ remote cause ” is one which operates indirectly, i. e., through the intervention of some other agency to produce an effect, as for instance, if a vessel was driven by a gale of wind alongside another vessel which was on fire, and was burnt, the remote cause of her loss would be a peril of the seas, and the proximate cause fire.

The liability of underwriters for a loss depends, as already stated, upon whether the proximate cause was a peril insured against. To give an illustration: a vessel insured against capture only was driven ashore by tempestuous weather, upon a hostile coast, where, having sustained only slight injury by the stranding, she was captured by the enemy. This was held to be a loss not by perils of the sea, but by capture, and as such recoverable under the policy. From the operation of the rule, it follows that it is no answer to a claim for loss which has been proximately caused by perils of the seas, to show that it was remotely occasioned by negligence, or some other contingency not covered by the policy. If a loss is sustained directly by a peril insured against, the underwriter is liable.

Coming now to the "Risks and Perils" clause, which we have just recited, let us consider its first words, viz.: "Perils of the seas"—what are "perils of the seas"? In brief, the term "perils of the seas" is expressive of the extraordinary dangers which are peculiar to that element. It includes all marine hazards and casualties resulting from the violent action of the elements as distinguished from their silent, gradual influence upon the vessel, and embraces all kinds of marine casualties such as shipwreck, foundering, stranding, etc., and every species of damage to the ship or goods at sea by the violent and immediate action of the winds and waves not comprehended in the ordinary wear and tear of the voyage, or directly referable to the acts and negligences of the assured, as its proximate cause. It is to be noted that ordinary deterioration or damage comprised under the head of "wear and tear," and which is incidental to employment in navigation and exposure to the ordinary action of the elements, is not recoverable as damage by perils of the seas. Vessels cannot be navigated without encountering the action of the wind and waves, and

are often liable to come into contact with piers, jetties, etc., in the ordinary course, during employment. Accordingly, the deterioration or injury which is the inevitable result of such employment, is not recoverable as damage by perils of the seas, for the latter expression refers to casualties which may, and not incidents which must occur.

Therefore, all loss or damage which the vessel or her cargo sustains at sea, owing to the extraordinary action of the elements, is attributable to perils of the seas. *Foundering*, which means going to the bottom, is accordingly included in this extensive term, if caused by the violence of the winds or waves, but not so if caused by overloading, defect or inherent weakness which conditions would violate the implied warranty of seaworthiness.

Grounding and Stranding, falls under the same designation if extraordinary, but not so, if it takes place in the ordinary course of navigation as when vessels are sent to a tidal harbor where it is expected they will lie ashore during the time the tide is out. *Collision* is a peril of the sea. Damage to the ship by the violent action of the winds and waves or to the cargo by water getting into the hold through the straining of the vessel in heavy weather is likewise recoverable under the heading "perils of the seas."

It must not, however, be supposed that perils of the seas include all the casualties which a vessel may experience in the course of her voyage, for so comprehensive a meaning, if admissible, would reduce all the other clauses, expressive of the risks insured against, to mere surplusage. Thus, a loss caused by the fire of an enemy is not recoverable as by a peril of the sea though it would be recoverable as a loss caused by men-of-war.

The next peril enumerated in the above clause is that of *fire*, and it will be enough regarding this peril to say

that loss directly occasioned by fire, is one of the losses assumed by underwriters, with the exception that fire generated through the inherent defect of a subject insured, or in consequence of the goods having been shipped in a damaged state is not a risk contemplated by the policy. But, if the combustion is originated by damage sustained by the goods after shipment, it would be covered. Furthermore, no matter how a fire may have been occasioned, whether by spontaneous combustion or otherwise, if it extends to other goods which are unconnected with the cause of the disaster or to the ship herself, the underwriter on such innocent goods, or the ship, is responsible.

Damage to cargo caused by pouring water into the hold, by scuttling the ship, or by taking other extraordinary measures to extinguish a fire, is recoverable in general average, or the damage may be claimed direct in the first instance from the underwriter of the goods which have been damaged thereby, under the heading of "Particular Average."

Furthermore, when either by a known or agreed usage, or by the express terms of this contract, the risk of a transit or deposit on land is included in a marine insurance, the underwriters are responsible for loss by fire to the property while so situated; thus, if goods are discharged for the common safety or to repair the ship, and are warehoused at a port of refuge, the risk of fire in the warehouse is covered under the terms of the policy.

Men-of-war, enemies, pirates, rovers, thieves, letters of mart and countermart, surprisals, takings at sea—these constitute the risk of war which is assumed by the underwriter and its peculiar feature may be said to be "violence at the hand of man," in contradistinction to violence of the elements, and the underwriter takes upon himself the burden of all loss or damage thus occasioned, whether it consists of injury to the vessel's hull, spars and rigging by an enemy's shot or shell, or by other

hostile acts or the total destruction of the property insured, by the operation of the same causes.

As, however, merchant vessels are not generally able to offer resistance to the attack of an armed ship, the casualty which most frequently results from hostilities is "capture," which has been defined as the forcible appropriation of property by an enemy or belligerent, with the intent to keep it. Under this clause, the policy covers all losses directly occasioned by capture, or seizure whether legal or illegal, by mutinous passengers or slaves, regularly commissioned vessels of war, privateers, or pirates. The two words "Men-of-War" and "Enemies," refer to those who are authorized by a prince or sovereign state and who make war in accordance with the law of nations, as distinguished from "pirates," "rovers," and "thieves," who are unauthorized depredators. The words "pirates," "rovers" and "thieves," as I may state, are considered altogether as referring to unauthorized persons who take by violence, in contradistinction to petty pilferage, which is not covered by this clause.

Letters of mart and countermart are commissions granted to privateers, either to prey upon an enemy's commerce or to enable merchants who have suffered from the depredations of an enemy, to recoup their losses by preying upon that enemy's commerce.

Captured property is not considered to have been diverted from its original owner until it has undergone sentence of condemnation in a legally constituted court of the enemy, but the assured is entitled to abandon to his underwriter and claim for a total loss as soon as he hears of the capture of the ship or goods. If the abandonment is accepted by the underwriter the matter is settled; if it is declined, the assured may take legal proceedings to compel the underwriter to settle, and will recover, provided the property has not been restored before the action has been brought.

Jettison. This word signifies the throwing overboard of part of the cargo or any article on the ship, or the cutting away or casting away, of masts, spars, riggings or other furniture, for the purpose of lightening or relieving the ship, in case of necessity or emergency.

When a jettison is effected to save the ship and cargo from a common danger, the value of the property sacrificed is made good to the owner in general average, but the assured may, however, elect to claim direct upon his underwriters for the insured value of the jettisoned property, and the underwriters, having settled his claim, will be entitled to receive whatever is ultimately recovered by the assured from third parties, in diminution of the loss.

Loss which is the necessary and immediate consequence of a jettison, is reimbursed in the same way as the jettison itself. Such for example is damage sustained by water flowing into a vessel's hold while a jettison is being effected. Furthermore, it must be noted that a jettison of goods which are carried in insecure positions such as on the deck of a vessel, unless sanctioned by the usages of trade, would not be protected by the risk of jettison recited above.

Barratry of the Master and Mariners. This may be defined as any act with criminal intent, committed by the master or crew of a vessel, in violation of their duty to the ship owner and without the connivance of the latter. Its essential feature is conscious misdoing, without which no error or omission, however great, will amount to that offense. It is an unlawful act, wilfully done. The most atrocious forms of this offense occur when a ship is scuttled, burnt, run ashore, or fraudulently diverted from her course and sold by the master or crew. Minor, but not less decided instances of the same kind occur as when, for instance, a ship-master engages in smuggling or any other illegal trade, or attempts to enter a port in inten-

tional violation of any blockade. The losses resulting from barratry, which are claimable from the underwriters are not limited to the direct physical results of the barratrous act, but comprehend all losses or damage sustained during the currency of the policy, which follows therefrom in the ordinary and natural course of events.

Arrests, Restraints and Detainments of all Kings, Princes and People of what nation, condition or quality soever. The terms "arrests" and "restraints" should be carefully distinguished from "capture." "Capture" is an intention to change the ownership of the property; "arrests" is taking with intent ultimately to restore to the owner; "restraint" is the prevention of the goods going.

The species of arrest to which shipping has been most frequently subject is an "embargo." It is a decree issued by the government of a state to prohibit the departure of vessels lying within its jurisdiction.

An embargo laid on any vessel, entitles the assured to give notice of abandonment and if the embargo continues to the time action is brought, to recover as for a total loss, subject, however, to the following exception, in which the right to abandon does not exist, viz.: when the arrest is only temporary causing momentary interruption of the voyage, but without occasioning any permanent loss of control over the ship.

Finally, the word "people" is to be understood, not in the sense of a mob or multitude, but as the ruling power of the nation, however it may be composed.

All other perils, losses and misfortunes that have or shall come to the hurt, detriment or damage of the said goods and merchandise or any part thereof. The terms of this clause are so comprehensive as at first sight to convey the impression that they embrace every kind of mishap not already particularized, to which property at sea can be subjected. Such, however, is not the case, for

here the rule of construction applies that general terms following particular ones apply only to matters which are only of the same kind as those specified. Accordingly, the effect of the general undertaking expressed above is to bring within the scope of the contract, all casualties, which though not identical with, are similar to, the risks enumerated. This clause has been held to include damage to a ship which was heeled over by the wind, in a graving dock, for while the loss was not caused directly by a peril of the sea, the vessel being on land at the time, it was held to be close enough to it to come within the "All other perils" clause. The loss of dollars thrown overboard from a vessel on the point of capture, in order that they might not be taken possession of by the enemy, was held to be akin to capture; the wrecking of a steamer through the bursting of a boiler was held to be akin to fire.

In order to further clarify this "All other Risks and Perils" clause, it may be well to recapitulate those losses which are not covered by it.

(1) Loss by the deterioration and ordinary outlay in navigation, wear and tear of tackle, corrosion, damage by rats or worms, and in general, ordinary deterioration of hull or materials and ordinary leakage and breakage and wastage of cargo.

(2) Loss by inherent defect of the subject insured, without direct intervention of sea peril, such as fish or meat becoming putrid; rice or flour, heated; fruit becoming rotten; wine turning sour, etc., etc.; loss of animals through disease and natural death.

(3) Loss remotely, not directly, caused by the perils insured against, such as loss of interest on capital, loss of market on cargo, owing to the protraction of the voyage by bad weather; loss arising from compulsory abandonment of the voyage, consequent upon blockade, unless the risks of war are assumed; the liability of shipowners

for loss or injury caused to persons or property through the default of their servants; and finally, loss directly attributable to the misconduct of the assured or his agent, such as loss by unseaworthiness or improper condemnation, theft which, when unaccompanied by overpowering force, might have been prevented by the exercise of ordinary vigilance on the part of those in charge of the vessel; to defects in the ship's tackle; damage by bad stowage; loss of articles placed in improper or insecure situations, etc., etc.

The next clause in the policy is what is known as the "Sue and Labor" clause, which reads as follows:

"And in case of any loss or misfortune it shall be lawful and necessary to and for the assured, his or their factors, servants and assigns to sue, labor and travel for, in and about the defense, safeguard and recovery of the said goods and merchandises, or any part thereof, without prejudice to this insurance, nor shall the acts of the assured or insurers, in recovering, saving and preserving the property insured, in case of disaster, be considered a waiver or an acceptance of abandonment; to the charges whereof, the said insurance company shall contribute according to the rate and quantity of the sum hereinafter insured."

This clause constitutes an agreement supplementary to and distinct from the main contract to indemnify the assured against loss or damage to the subject insured.

Its object and general scope is to encourage the assured, in case of accident, to make exertion for the preservation of the property insured, by agreeing that such action shall be without prejudice to the insurance and by a promise on the part of underwriters to contribute to any expenditure which may be incurred by the assured or his agent in an effort to avert an impending loss.

It must be noted here that this clause only comes into effect on account of the happening of any loss or mis-

fortune covered by the policy, for it is manifest that if property is subjected to a danger not assumed by underwriters, the latter have no interest in any efforts which may be made for the protection of the subject insured; as, for instance, if a ship was insured free from claim for capture, and was in danger of being taken by an enemy the underwriters would have no interest in any expenses which the assured might incur in her safeguard or defense. The terms of this clause are considered as being mandatory upon the assured to make every reasonable exertion to save the property insured from loss or damage, and if he fails to do so the resulting loss will not be recovered under the policy.

The persons who are specially authorized, in the terms of this clause to render services to the property, are the "assured," their "factors," "servants" and "assigns," which mean the assured themselves, and their agents, be they direct or voluntary, but not salvors.

Loss in the nature of general average is also not covered by the clause, because the general maritime law gives a remedy for this species of loss irrespective of the Suing or Labor Clause.

The next clause reads:

"Nor shall the acts of the assured or insurers, in recovering, saving and preserving the property insured in case of disaster, be considered a waiver or an acceptance of abandonment."

This provides that the rights of either party shall not be prejudiced by any acts, rendered under the authorization of this clause which might otherwise be held to imply ownership.

Thus action taken by underwriters under this clause to minimize a loss for which they are liable does not expressly imply on their part an acceptance of abandonment.

These words were inserted because if it were not for them either the assured or the underwriters might be justified in refusing to take any action whatever tending to preserve the imperilled property so as not to prejudice their rights, to the great detriment of whichever of them were ultimately held responsible for the loss.

The last part in the clause requiring consideration is the basis upon which contribution is to be made by underwriters towards the expenses incurred under it, and the common sense view prevails that the expenses properly allowable under it must be confined to that which relates to the interest insured, so that if charges are incurred for the safeguard and recovery of other interests as well, they must be apportioned over the aggregate value, and the underwriters on a particular interest would only be liable to pay that proportion of the total expenditure which attaches to the value of the interest insured.

Then follows a clause reading:

“Having been paid the consideration for this insurance by the assured, or his or their assigns, at and after the rate of”

This is a receipt in the policy for the premiums to be paid by the insured to the underwriters for the insurance covered by the policy, and when filled in, it constitutes a receipt for the money paid.

Here follow a number of clauses dealing with the method of adjustment, settlement and payment of losses should any such occur under the policy.

The first clause reads as follows:

“ And in case of loss to be paid in thirty days after proof of loss, proof of interest, and adjustment exhibited to the insurers (the amount of the note given for the premium, if unpaid, and all sums due to the company from the assured when such loss becomes due being first deducted, and all sums coming due being first paid or secured to the satisfaction of the insurers.) ”

This clause provides that the assured shall be entitled to his money within thirty days after he has furnished the company with certain proofs which they demand to show that he has actually sustained a loss under his contract.

The term of thirty days is inserted (and this may be varied at will by agreement between the parties) to allow the underwriters a sufficient length of time in the ordinary course of business to examine the assured's proofs and see whether they are satisfactory.

The first proof demanded is naturally the proof of loss, in other words a proof furnished by the assured that a loss has actually been sustained.

This will generally consist of a protest or sworn statement of the master and crew of the vessel transporting the merchandise of the facts and cause of the loss, reciting at length the various perils which have resulted in the loss claimed.

These are usually recited in considerable detail so that both the assured and the underwriter can actually determine to what the loss sustained is attributable.

This may sometimes be amplified or varied by sworn statements of the master and crew, or in their absence by others who may be in position to know how the loss claimed for has been sustained.

The next proof of loss usually demanded is a survey made by unprejudiced persons showing the extent and nature of the loss.

This survey may be made by a sworn surveyor of the port, by government officials, or it may be made by experts appointed by the parties at interest who may later agree upon the cause and extent of the damage between them.

Frequently goods arrive damp or wet and it is difficult to ascertain whether the damage can be properly attributable to a peril insured, or to some other peril for which

the underwriter is not liable, such for instance, as damage by rain water, and in this and similar cases it is necessary to have the opinion of experts to ascertain the cause of the loss.

In the event of the experts failing to agree as to the amount of the loss, the assured can demand a sale at auction in order to determine the actual loss which has been sustained on his goods.

The next proof demanded is a proof of interest, such as invoice and bill of lading, together with the affidavit of the assured to show that he or his principals actually have the interest claimed in the subject matter of the insurance.

The adjustment is the final statement of the loss which may be made by the assured themselves, but which is usually drawn up by an expert claim stater showing in detail the cause and kind of the loss and the amount claimable from the underwriter, and as soon as these documents are presented by the assured the thirty days begin to run.

From the amount which is shown to be due by the underwriter is deducted any unpaid premium note and any debt due to the company by the assured when such loss becomes due, and the underwriter can also demand that any debts coming due may either be first paid or else secured to his satisfaction. As a matter of practice this is rarely done.

Then follows a clause which says that "no partial loss or particular average shall in any case be paid, unless amounting to 5 per cent."

It becomes necessary here to consider what is a particular average or partial loss.

The term particular average in relation to marine insurance, is, as already stated, equivalent to partial loss, and consists in either a deterioration, or a total loss of

part of the subject insured by the operation of the perils insured against.

The clause, therefore, provides that no deterioration or loss of the subject insured shall be paid unless it amounts to 5 per cent. of the value of the goods or property already insured.

This is to remove from the policy small and vexatious claims which would otherwise tend to greatly increase the premium charged against the assured.

Insurance is designed to protect owners of property against heavy losses and not merely guarantee them against every little damage which they may sustain.

The owner of an invoice of merchandise of \$1,000 would, no doubt, object very seriously to losing all or one-half of his venture, whereas a small loss of \$50 could properly be taken care of by his profits, while the inclusion of it in an insurance policy would really be to his detriment, for the reason that the cost of ascertaining and adjusting a large number of these small losses would be so great that the necessary premium charged therefor by the insurance company would be considerably greater than the losses themselves would be if assumed by the assured.

The percentage of 5 per cent. may be varied by agreement.

In the American policies it is usually 5 per cent., in English 3 per cent.

Then follows what is known as the American clause, which reads as follows:

“ Provided always, and it is hereby further agreed, that if the said assured shall have made any other insurance upon the property aforesaid prior in day of date to this policy, then the said insurance company shall be answerable only for so much as the amount of such prior insurance may be deficient towards fully covering the property hereby insured. And the said insurance com-

pany shall return the premium upon so much of the sum by them insured as they shall be by such prior insurance exonerated from. And in case of any insurance upon the said property subsequent in day of date to this policy, the said insurance company shall nevertheless be answerable for the full extent of the sum by them subscribed hereto without right to claim contribution from such subsequent insurance. And shall accordingly be entitled to retain the premium by them received in the same manner as if no such subsequent insurance had been made. Other insurance upon the property aforesaid of date the same day as this policy, shall be deemed simultaneous therewith; and the said insurance company shall not be liable for more than a rateable contribution in the proportion of the sum by them insured to the aggregate of such simultaneous insurance."

This clause is called the American clause because it was originally adopted and is generally confined even at the present time, to policies issued by American underwriters.

Its purpose is clearly seen from the construction of the clause, namely, it provides that where the assured has effected insurance upon the same property with several underwriters that the insurance shall attach in order of date of policy; the first underwriter being responsible to the full extent of his policy and the subsequent underwriters taking what is left, and when different policies are issued on the same date, the loss, if any, shall be prorated between them.

The next clause reads as follows:

"It is also agreed, that the subject matter of this insurance be warranted by the assured free from loss or damage arising from riot, civil commotion, capture, seizure, or detention or from any attempt thereat, or the consequences thereof, or the direct or remote consequences of any hostilities, arising from the acts of any government, people, or persons whatsoever (ordinary,

piracy excepted), whether on account of any illicit or prohibited trade, or any trade in articles contraband of war, or the violation of any port regulation, or otherwise. Also free from loss or damage resulting from measures or operations incident to war, whether before or after the declaration thereof."

This clause was originally contained in the margin of the policy in the shape of a written endorsement and its purpose was to nullify and eliminate the perils of men-of-war, enemies, letters of mart and countermart, surprisals, takings at sea, arrests, restraints, and detentions of all kings, princes and people of what nation, condition or quality so ever.

The reason for this is that the risk of war is so great in the event of war being declared that the underwriter does not feel disposed to include it in the ordinary course of business, without receiving a very large additional premium and the clause is inserted in the policy, therefore, for the underwriter's protection so that in the event of risk of war being declared he may be at liberty to charge adequate additional rates for the extra risk he runs.

The rate of insurance on war risks varies from day to day in accordance with the advice which the underwriters receive as to the conditions prevailing at the time the risk is accepted, or which may be expected to prevail at the time the merchandise covered against capture reaches the danger zone.

It would, therefore, be manifestly unfair to expect an underwriter to insure this risk at the same rates as the ordinary perils of the sea, fire, etc.

Subsequently in order to avoid the clerical labor of writing this clause in the margin of the policy it was introduced in print in the margin of the policy and from there was transferred to the body of the policy.

To quote from Lord Selborne the words "Warranted

free from," mean that although the general terms of the policy would have covered this risk, yet considering the special risk of the particular matter, the underwriters unless they are paid a premium for consenting to take it, do not choose to be liable where the particular thing happens which they have stipulated by this warranty that they shall be warranted free from, and furthermore the words, capture and seizure are not to be considered as having sole reference to the acts of belligerents.

The word capture would seem to include every act of seizing or taking by an enemy or belligerent. Seizure is a larger term and goes beyond it and may reasonably be interpreted to embrace every act of taking forcible possession, either by lawful authority or by overpowering force.

The words capture and seizure can be understood to include every forcible proceeding arising out of the perils insured against, whereby the assured is deprived of the control or possession of his property, whether such proceeding be permanent or only temporary in effect, and whether it be an act of an enemy or of a friendly power mistaking the vessel for an enemy, mutinous passengers or a lawful authority, with the exception of piratical seizure, which is expressly covered.

It is, therefore, clear that this clause relieves the underwriter from loss or damage directly arising from riot, civil commotion, capture, seizure, detention or from any attempt thereat, or the consequence thereof, or the direct or remote consequences of any hostilities (for instance, such as a loss by striking a torpedo, which had gone adrift) and free from loss or damage resulting from measures or operations incident to war, whether before or after the declaration thereof, such, for instance, as stranding, owing to a hostile government having seized a lighthouse and extinguished its light, and it makes no

difference whether these acts occur prior or subsequent to the actual declaration of war.

Then follows a clause which becomes effective in the event of the free capture clause, above described, being deleted or stricken out from the policy, thereby restoring the risk of war to the policy.

This clause reads as follows :

“ In the event of risk of war being assumed by endorsement under this policy, the assured warrant not to abandon in case of capture, seizure or detention until after the condemnation of the property insured, nor until ninety days after notice of said condemnation is given to this company. Also warranted not to abandon in case of blockade; and free from any expense in consequence of detention or blockade, but in the event of blockade, to be at liberty to proceed to an open port and there end the voyage.”

The purpose of this clause is to prevent the assured from abandoning his property in the event of its capture until after it has been condemned and until ninety days after notice of said condemnation is given to his underwriter.

As has been already recited in the absence of this clause he would have the right to abandon to his underwriters the moment his property was captured.

This clause takes away that right in order that he may be interested in the property and, therefore, active for its defense and recovery until after it has actually been condemned, and the provision requiring ninety days to lapse is to allow the underwriters time to take such action as they may desire towards the setting aside of the decree of condemnation if they are able to do so.

The warranty not to abandon in case of blockade is of like nature—it prevents the assured from abandoning simply because the port to which the cargo is destined has been blockaded.

It frees the underwriter from any expenses in consequence of detention or delay on account of such blockade and it provides that the assured in such case may proceed to an unblockaded port and there end the voyage.

The next clause in the policy is called the "Memorandum," and it provides as follows:

"It is also agreed, that bar, bundle, rod, hoop, and sheet iron, wire of all kinds, tin plates, steel, madder, sumac, brooms, wicker ware and willow (manufactured or otherwise), straw goods, salt, grain of all kinds, rice, tobacco, Indian meal, fruits (whether preserved or otherwise), cheese, dry fish, hay, vegetables and roots, paper, rags, hempen yarn, bags, cotton bagging, and other articles used for bags or bagging, pleasure carriages, household furniture, skins and hides, musical instruments, looking glasses and all other articles that are perishable in their nature, are warranted by the assured free from average unless general; hemp, tobacco stems, matting and cassia, except in boxes, free from average under 20 per cent., unless general; and sugar, flax, flaxseed and bread, are warranted by the assured free from average under 7 per cent., unless general; and coffee in bags or bulk, pepper, in bags or bulk, free from average under 10 per cent., unless general. Profits warranted free from claim for general average, but subject to same percentum of partial loss as if the insurance were on goods. In case a total loss of profits be claimed, the underwriters to be entitled to a credit of the same percentum of salvage as if the insurance were on goods, and in case of contribution in general average for any portion of the goods at the customary sound value, this company to be free from claim for loss on such portion. Not liable for loss arising from wet, breakage, leakage or exposure of goods shipped on deck."

The reason for this clause is because certain classes of goods are found to be more susceptible to small damage and loss resulting from atmospheric conditions, condensa-

tion of moisture or dampness in the hold, sweating, change of flavor, and other matters for which underwriters are not legally liable, but which, as a rule, unless they are specifically provided for are a fruitful source of dispute with the policyholder, who having paid for sound goods and having received them damaged, naturally wants to get the loss from somebody, and who may, therefore, attempt to make a claim upon his underwriter in ignorance of the fact that the damage is one which the underwriter has not been paid to assume.

The Memorandum clause, therefore, bunches together a variety of products, susceptible to damage of this nature which it warrants free from damage absolutely unless general, that is to say no loss, except a total loss and general average contribution are paid on articles of this character, so that the assured can have no possible ground of dispute that he did not know the kind of policy he was getting and thought the goods were insured against particular average damage.

Next follows another class of goods which are warranted free of loss under 20 per cent., and a still further class warranted free of loss under 7 per cent., and a further class warranted free of loss under 10 per cent.

Regarding all these different classes and a great many other species of merchandise, which are not mentioned in the memorandum clause, it is pertinent to remark, that as a matter of practice underwriters, provided they get sufficient rate therefor, are perfectly willing to assume all risks of loss by the perils insured against on all the merchandise dealt with in this memorandum clause; consequently it is frequently modified by written agreements between the underwriter and the assured. Then follow the words "Profits are warranted free from claim for general average, but subject to the same per cent. of partial loss as if the insurance were on the goods."

The reason for this is that it is very much easier to destroy profits than it is to destroy goods.

A small partial loss to the goods may involve a total destruction of the profits to be realized from their sale, hence the provision that the same percentage of partial loss shall be paid on profits as on goods.

The next part of the clause reads:

“ In case a total loss of profits be claimed, the underwriters to be entitled to a credit of the same per centum of salvage as if the insurance was on goods.”

This provides that if a total loss be paid the underwriters shall be entitled to their proportion of profits exactly as they would have been if the insurance had been on goods and is consequently similar to the clause which precedes it regarding partial loss on profits.

Then follow the words: “ In case of contribution in general average for any portion of the goods at the customary sound value, this company to be free from loss on such portion.”

This is to take care of rise and fall in the market and provides that in the event of a rise in the market occurring whereby the value of the goods insured by the company is increased, that the company shall not be responsible for the general average contribution on the increased market value, they not having received any premium therefor.

The last words of the clause are: “ Not liable for loss arising from wet, breakage, leakage or exposure of goods shipped on deck.”

The reason for this provision is so plain that it needs no explanation. The deck is not a proper place to store any goods, as it is open to the weather, flying spray and to many classes of loss which goods carried under deck are free from.

The underwriter, therefore, provides that if the assured should be so careless as to allow his goods to be

stored on deck, he, the underwriter, shall be free from loss.

As a matter of fact the shipowner would be responsible to the assured for such loss unless the assured agreed to their being so stowed, or unless they were carried on deck in accordance with custom of the trade.

Before proceeding further, it is pertinent to explain the meaning of the words "General Average," and as this phrase refers to one of the most ancient laws still existing, a few words of explanation in reference thereto may not be amiss.

The practice of general average far antedates the practice of marine insurance and goes back to a time long before the Christian era, and to a time when every merchant, who had an adventure at sea, either followed his goods himself, or sent his representative in the ship which carried his goods to oversee their handling and sale.

It would frequently occur during the course of such a voyage along the shores of let us say the Mediterranean, or the shores of Africa, that a storm would arise and the small ships of those days would be in serious peril, only to be relieved by the throwing overboard of a portion of the goods carried by them in order to lighten the ship. Naturally every merchant would want his neighbor's goods thrown overboard in order that his own might be saved, and in order to avoid the disputes and loss incident to such an unfortunate condition of affairs, we find recorded in the laws of Rhodes, long prior to the Christian era, a law stating that "that which was sacrificed for the benefit of all in a sea adventure, should be made good by the contribution of all," and that if one or more merchants had their goods thrown overboard for the general safety that all the other merchants and the shipowner should contribute to make good the loss sustained through the aforesaid jettison.

This law has been accepted and adopted by all mari-

time powers, together with many changes of form and has been amplified to cover practically every sacrifice of value for the common benefit. It is peculiar to commerce of the sea as nothing like it exists on land.

It is still in effect today among all maritime nations and the only effect of the practice of insurance upon it has been to transfer from the shoulder of the assured to the shoulder of his underwriter the cost of making good that contribution which all the interested parties in a sea adventure are obliged to pay to the unfortunate member of their company whose property has been sacrificed to secure the common safety.

The next clause in the policy reads as follows:

“Warranted by the assured free from damage or injury from dampness, change of flavor, or being spotted, discolored, musty or moldy, unless caused by actual contact of sea water with the articles damaged, occasioned by sea perils.”

The purpose of this clause is to protect the underwriter from claims which are not directly due to perils insured against, or rather to draw a line as to how such claims shall be ascertained.

Many classes of merchandise are subject to damage such as the above without the intervention of any sea perils whatever.

Change from a warm to a cold climate precipitates moisture in the hold of the vessel and certain delicate goods such as flour, tobacco, sugar, dried fruits, etc., are very easily damaged by such causes.

The above clause clearly defines and brings to the attention of the assured the fact that losses of this kind will not be paid unless caused by actual contact with sea water caused by sea perils.

Then follows a clause reading:

“In case of partial loss by sea damage to dry goods, cutlery, or other hardware, the loss shall be ascertained

by a separation and sale of the portion only of the contents of the packages so damaged, and not otherwise; and the same practice shall obtain as to all other merchandise as far as practicable.”

This provides that sound goods shall not be sacrificed by being mixed up and sold as damaged goods, but the underwriter shall be responsible only for the goods that are actually damaged by the perils insured against.

The clause which follows it reads:

“ Not liable for leakage of molasses or other liquids unless caused by stranding or collision with another vessel.”

This clause is inserted in the policy for the reason that without it anybody who chooses could ship his molasses or other liquids in a leaky barrel and then make a claim on his underwriter for total loss on each voyage and the underwriter in the event of a sea peril having intervened would be obliged to prove that the packages were unfit at time of shipment, in order to escape claim.

Then follows a clause of very recent origin, reading:

“ Warranted by the assured that this insurance shall not enure directly or indirectly to the benefit of the carrier or other bailee, by stipulation in bill of lading or otherwise, and any breach of this warranty, and any act or agreement by the assured prior or subsequent hereto, whereby any carrier or party liable for or on account of loss of or damage to any property insured hereunder, is given the benefit of any insurance effected thereon, shall render this policy of insurance null and void.”

The history of this clause is interesting.

For many years it has been the practice and indeed the duty of underwriters to pay all losses caused directly by perils insured against, though indirectly by the fault or negligence of the common carrier, to their assured and

then to collect losses, as far as possible from the common carrier, as for instance if cotton was burned up in transit through the negligence of the railroad company, the underwriter on the cotton paid his assured the loss and then brought suit in the assured's name against the railroad to recover the money which he had paid out.

This under the law he was legally entitled to do and the assured consequently received very much cheaper rates from his underwriter than would have been the case had the common carrier been at liberty to damage or destroy property entrusted to his charge for transportation without being held accountable to anybody therefor.

Common carriers resisted these efforts to hold them responsible on behalf of shippers and underwriters, but finally the law became so well settled that they were responsible for losses caused through their own negligence, that they endeavored to escape liability by the insertion of numerous clauses in their bills of lading, one of which attempted to confiscate the insurance which the merchant had paid for on his own goods so as to apply it to the common carrier's own benefit.

The above clause consequently provides that the insurance under the policy shall not enure directly or indirectly to the benefit of any carrier or other bailee and provides that if the bill of lading accepted by the assured contains a clause inserted by the railroad confiscating the assured's insurance, the policy of insurance shall be null and void.

The next clause reads:

“ In case of any agreement by the assured, prior or subsequent hereto, whereby any right of recovery of the assured for loss of or damage to any property insured hereunder, against any person or corporation, is released, impaired or lost, which would on acceptance of abandonment or payment of a loss by this company, have enured to its benefit, but for such agreement or act, this company

shall not be bound to pay any loss, but its right to retain or recover the premium shall not be affected.”

This provides that the assured shall not make agreements with common carriers or other bailee or persons which destroy or vitiate the underwriter's right to recover from a common carrier or other bailee, who is legally responsible for the loss.

Frequently common carriers attempt to induce shippers to waive their legal rights by the promise of lower freight rates or other valuable consideration and as the underwriter can only succeed to the rights actually possessed by his assured, such a contract made by the assured with the common carriers greatly increases the risk thrown upon the underwriter and would require the underwriter to charge a very greatly increased premium to cover it.

It has been held by the Supreme Court of the United States to be contrary to public policy to allow railroad or other common carriers to escape from their legal responsibility for losses caused by their own negligence by means of special contracts with their shippers.

The above clause lays upon the shoulder of the assured the burden of enforcing his rights against the common carrier.

The last clause of the policy reads:

“Warranted by the assured, that the assignment of this policy or of any insurable interest therein, as also that the subrogation of any right thereunder to any party, without the consent of this company, shall render the insurance affected by such assignment or subrogation, void.”

The reason for this is that underwriters insure the man, the company, or the firm because of their moral and financial reputation as much as upon the character of the goods or on the character of the ship or vessel trans-

porting them, and while an underwriter would be perfectly willing to insure a firm of reputable merchants on any reasonable voyage, they would distinctly decline to insure another firm whose moral or financial standing might be shaky.

Hence the above clause is inserted to provide that when the underwriter insures John Doe he can be sure he is insuring John Doe and nobody else and that John Doe shall not have the right to assign his policy to anybody else without the underwriter's consent, otherwise, no underwriter would know whom he was insuring.

The foregoing remarks apply to a contract of marine insurance on merchandise but the rules of construction enunciated apply equally to all other kinds of marine insurance. These are so many in number that it is not possible in the scope of this article to do more than touch upon them.

The subject of marine insurance of greatest magnitude next to the insurance of merchandise, is the insurance on the hulls of vessels. The general construction of a marine policy on hulls is similar to a policy of insurance on cargoes as regards the risks assumed, and the other principal features of the contract, but it also contains many clauses peculiar to itself.

Special forms of policy are also issued for insurance on disbursements, vessel freights, charter hire, live animals, passage money, and many special kinds of cargo.

To recite all the clauses and special forms of policy granted in order to cover the needs of the commerce of the world is not possible within the scope of this article, but the principles of construction above enunciated apply to all of them, and the laws governing their interpretation are the same whether they be on hull, cargo or other maritime interests.

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CHAPTER XV

AUTOMATIC SPRINKLERS

BY JOHN R. HAMILTON

AUTOMATIC sprinkler fire protection consists of a system of piping arranged upon the ceilings of buildings to supply water to "automatic sprinkler heads" (small valves arranged to automatically open at predetermined heat), the heads being so placed in regard to the walls and timbering outlining the ceiling, as to protect every square foot of their area. The fact that "sprinklers" will deposit water at the very seat of fire and practically at its origin, has made their use most successful and constituted them great conservators of life and property.

Looking at the ruin caused by a fire, small or great, one of course is impressed with the thought that the fire could have been easily extinguished by a small quantity of water (*a*) had someone been there at its origin; (*b*) had he the water to use; (*c*) had he a means of using the water; (*d*) had he the presence of mind. But fires originate often in unfrequented places at inopportune times and even if discovered the one making the discovery is often powerless to extinguish it because of the lack of water or means of throwing or pouring it, even if he or she have the presence of mind.

On the other hand a properly constituted sprinkler system assures every head an adequate supply of water upon its opening and as each head is allotted just a small and definite territory, it guards that space—always, night or day. Being mechanical, it is not affected by fright and is never at a loss as to the proper thing to do.

The sprinkler head is a small valve having a circular opening usually one half inch in size. This opening is normally held closed by a disc, held in place through a

series of levers retained by a solder link. The sprinkler is made to open fully and very quickly, when the heat has reached a definite point, when the water is impinged against a distributing plate or "deflector" which sheds it evenly over a given space. Sprinklers are consequently graded in regard to their opening points, according to the temperature of the location they are to occupy. Thus in ordinary locations, such as stores and the usual run of factory rooms, the regular sprinkler is used, rated 165 degrees; harder heads being used where higher temperatures are to be contended with, such as boiler rooms, dry kilns, japanning ovens, etc.

Most apparatus, such as machinery, is in more or less continuous service and any imperfection will manifest itself through the use. Sprinklers on the contrary are in habitual disuse; consequently great care must be exercised in the formation of the head so that when it is required, there will be nothing in its component parts that would prevent its prompt action.

Considerable effort has been made and years consumed in bringing sprinklers to their present state of perfection and the process of elimination has weeded out a number of devices made in former times, that have shown imperfections in their make-up. This very gradual development has brought into existence heads that are to a great extent, proof against corrosion and the attack of various fumes, and rugged enough to withstand a reasonable amount of abuse, yet sensitive enough to respond quickly to any rise in temperature. Since it is important to get at a fire as soon as possible after its origin, it is evident that the more sensitive a sprinkler head can be kept, at the same time bringing in the other desirable features, the better the head will be, from a fire-fighting standpoint.

There are several classes of sprinkler systems. Those installed in rooms that are kept at a normal heat and

not subject to freezing are supplied with water throughout, that is the water is in the system of piping up to the sprinkler head. These are technically called "wet systems."

On the other hand an installation in rooms subjected to freezing, or in piers, runways open to the weather, covered platforms, etc., have normally no water in the piping, which instead is filled with air at a pressure of say forty pounds, which pressure is easily maintained when the system is in normal condition with heads closed. The small amount lost in leakage is replenished at intervals with a suitable air pump, operated by hand in small equipments and by power in larger ones. In a fire the sprinkler opens in the usual way and on opening quickly reduces the air pressure. This air pressure has been instrumental through a proper valve in keeping the water in the supply pipe, back to a definite point, where there is no danger of freezing. This valve, a "dry pipe valve," is usually boxed in or placed in a small "house" the temperature of which is maintained well above the freezing point, care also being taken to prevent freezing in the water supply pipe up to the dry pipe valve. At this point, as stated, the air acting on the valve, keeps the water in check but upon the reduction of pressure, through the opening of a sprinkler, the dry valve quickly "opens" and allows the water to flow to the sprinkler system and, as the air is already escaping at the sprinkler head nearest the fire, water quickly arrives at that point and is thrown upon the flames.

In former times the pipes in exposed places subject to freezing were filled with water prepared with chemicals to render it non-freezing, but since clear water in quantity had to be behind this special fluid for the fighting of the fire, the special water was apt to become diluted and freeze. This with other defects tended to make such a

system unreliable and now the "dry pipe system" is used instead.

For the protection of buildings against fires in adjacent property, "open" sprinklers are also installed, that is heads normally open on pipes normally empty, into which water can be turned through a valve suitably located on water supply pipe. These open heads are installed for the protection of windows and their framing, cornices and roofs, as well as the sides of wooden buildings.

It was early recognized that a valuable thing in connection with sprinklers would be a signal to indicate when they were brought into service in order that assistance could be given to them, and so that, as soon as the fire was extinguished, the water could be shut off, as sprinklers are "Automatic" in regard to their opening only, and when so opened will play water as long as water is supplied.

On wet systems this signal is obtained automatically by an "alarm valve" located at the base of the "riser" or main water supply pipe. Alarm valves as now made give both an electric and mechanical alarm. The latter operated by a water motor, sounds a large gong on the outside of the building. The former usually gives its signal in some remote part of the building, such, for instance, as the boiler room or superintendent's office or externally at the owner's home, the local fire department, or a telegraph office, provision having been made in recent years to receive signals in a specially appointed telegraph office. This latter phase has been carried further so that if a control valve, essential to the proper operation of the sprinkler system, should be tampered with, this fact is at once registered at the "central" office. Any serious dropping of temperature that might freeze the water in the tank and endanger the system is similarly reported.

As an adequate supply of water is one of the first es-

entials of a good sprinkler system, installations are usually supplied with a double source, as for instance, a supply from the regular city main, providing these are of a reliable nature and such as to give a good supply, and also from a tank on a support above the roof or on a trestle near the building. A pump of special design is sometimes used in lieu of either of the above mentioned sources, while in some instances the supply is derived from two tanks, one of which, called a "pressure tank," is a closed receptacle like a steam boiler in which compressed air, acting as a cushion on top of the contained water can be made to give to the latter a high pressure. Practice has shown that a little water at considerable pressure, acting through a sprinkler system, is sufficient to extinguish any ordinary fire. In systems installed in cities with fire departments, provision is made for the latter to co-operate with the sprinkler equipment by attaching hose lines to special connections suitably located at the sidewalk—"siamese connections" to which they can siamese their hose and pump additional pressure into the system knowing that it will go direct to the source of the fire.

By reason of the indorsement of the insurance companies, who make radical reduction in rates where sprinkler equipments are found, very large values are trusted to their efficiency, and too much care can scarcely be given to their installation and the materials entering into them. In recognition of the importance of the sprinkler equipment many special devices, such as fittings, hangers and auxiliary appliances, have been designed to make them more reliable in operation and less liable to derangement when not in operation.

The proper protection of a building with automatic sprinklers is a problem to itself and should be considered by men specially trained to this end, for the very fact that a sprinkler system is used so rarely and then on

such urgent need, makes it imperative that it be planned with intelligent care and be installed by someone who knows to a certainty just how each detail should be arranged and how each sprinkler should be located to make it most efficient. Automatic sprinklers, properly installed, protect every square foot of space within a building and are ever ready watchmen to locate a fire, ring an alarm and give a supply of water evenly distributed upon the fire just where and when most needed. The automatic sprinkler is without doubt the most efficient means of fighting fire that has yet been originated.

PART III

LIFE INSURANCE

CHAPTER XVI

HISTORICAL SKETCH

BY JOSEPH A. DEBOER

PRIVATE underwriters in England entered into contracts of insurance contingent on the duration of human life as early as the sixteenth century and evidence exists that formal study was given in Holland to the subject of life annuities prior to that time. At that period, however, there was little practice involving the application of principles, as now understood. The life insurance work was purely incidental and of a temporary nature, involving large premiums and lack of average in the assumption of risk.

The want of intelligently used data and of proper business supervision delayed the progress of life insurance service. In 1706 a royal charter was granted to "The Amicable Society for a Perpetual Life Assurance Office" and that society, with some others, entered upon a career of more or less uncertain and illiberal action. Later, in 1756, there was projected in England "The Society for Equitable Assurance of Lives and Survivorships," an intended improvement in liberality as to admissions and terms over the preceding institution. By the beginning of the nineteenth century the theory of life contingencies had been worked out to a very considerable extent through the studies of Pierce and Morgan; the Northampton Table had been supplied, and not less than eight insurance companies were doing business in Great Britain. In 1844 over 140 companies and societies, on a more or less substantial footing, were established in Great Britain and in that year attracted the consideration of the British Parliament. Just one year before, in 1843, the Mutual Life of New York issued its first policy,

so that, apart from the extremely interesting and novel history of the Presbyterian Ministers' Life Fund of Philadelphia, it appears to be the fact that life insurance was already in existence in the United States at the time its value to society was first definitely recognized in England as a subject of parliamentary debate.

Since that time, over sixty-eight years ago, life insurance in the United States has far outgrown its operations in England; this because it is especially adapted to the needs of our people, because it is especially fostered as a business by the character of our political institutions, and, finally and particularly, because it has received the impulse of an extraordinary body of managers and agents, who have controlled and directed its sales and adjustments and through whose zeal, ability and unremitting energy, life insurance has been advanced to a national position of the utmost political and economic importance.

The business of level premium life insurance owes the development and expression of its present principles and practice in the United States to work done in the last fifty years. What that practice is, as defined by policies of life insurance, or limited and prescribed by statutes, or as interpreted by courts, is of more practical importance than the consideration of the origin of life insurance, or the study of the distinguished careers devoted to—and even sacrificed—in its development and growth. It is now possible to reach specific conclusions and to lay down practical questions for future consideration. The expansion of life insurance from a condition in which it had to contend with contempt and public incredulity, to its present commanding position of respect and international importance, has been accomplished. Its development from a condition of more or less speculative and sentimental possibilities to that of a rational, professional and commercial necessity is now a recognized fact. The only

questions now to be settled when life insurance is under consideration are: "Is the insurance safe?" "What service will it render?" "How much will it cost?"

Life insurance is now one of the most important subjects of legislation and public concern, and, in its application to social needs, has become concretely a profession and a recognized economic force in the home and business life of the world. This conclusion was prophesied by that noted scholar in life underwriting, Commissioner Elizur Wright of Massachusetts, years ago, when, with less than \$200,000,000 of life insurance in force for all the regular companies, he said: "It is an institution destined to effect great good or evil for a course not of years, but of ages." When that was written there was no definite knowledge of the enormous values involved and a profound inability to conceive the stupendous totals to which the business would be advanced in fifty years. Notwithstanding the nation's growth in population and wealth, and, above all, in its power of creating values, that prophecy of a half-century back has been liberally fulfilled—fulfilled in the direction always of a constantly increasing service to the country, to the people who compose the membership of the companies, and to the uses of the world. Life insurance has passed from the slender, though scientific, basis on which it was placed in England a trifle over a century and a half ago, to the status of a great financial factor in the business of the world, affecting all values, equalizing all exchanges, determining the character of all investments and creating for the individual an opportunity to safeguard himself and his home and to conserve his personal independence by utilization of the mighty forces of co-operation.

Status of Life Insurance a Half Century Ago

A half century ago the Massachusetts Department of Insurance was the chief authority on all questions relat-

ing to life insurance, and we find it even then apologizing to the legislature of that state because its returns were incomplete on account of the demands upon it for reports on fire and marine insurance, which were then the two other main forms of insurance work. It was recognized by the Massachusetts Department that Chapter 177 of the Acts of 1858, continued in force by Chapter 58, Section 10, of the General Statutes, placed upon it the onerous and important duty of reporting the valuations of policies of insurance on life—valuations which involved assumptions of mortality and interest, in the adoption of which the Commissioners were left much liberty. It was a fact of the greatest importance that they settled upon 4 per cent. as the interest assumption and upon the Actuaries' or Combined Experience Table of Mortality as the mortality assumption, since the adoption of both established not only a solvent condition of valuation but, upon the whole, a reasonably correct measure of the means of investment and of mutuality in the distribution of the normal costs of the risk. This was especially true, considering that the chief policy form was the ordinary life with but moderate volumes of limited payment life, term and endowment in the total issues.

At that time the number of companies in the United Kingdom was supposed to exceed 160 and the outstanding insurance one billion dollars, while at the same time the aggregate amount insured by the nineteen companies doing business in Massachusetts was about \$153,000,000, representing net assets (including capital of \$2,108,000) of \$22,292,850. Also at this period American influence was becoming recognized as shown by copious quotations from Massachusetts reports by the Assurance Magazine, the organ of the British Institute of Actuaries. It is also to be noted that the activity and vigor displayed by the officers and agents of the companies here made good the impairments incident to the Civil War, even before its

This Policy of Insurance WITNESSETH.

ANNUAL PREMIUM.

\$10=

NOW INSURE.

\$2500=

age
40

That THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, in consideration of the sum of Eighty dollars and no cents, to them in hand paid by Emmie Reilly Nelson and of the annual premium of Eighty dollars and no cents, to be paid in or before the first day of February in every year, during the continuance of this Policy, **DO ASSURE** the Life of her husband John G. Nelson of the City of New York in the County of New York State of New York for the sole use of the said Emmie Reilly Nelson in the amount of two thousand hundred dollars, for the term

And the said Company do hereby Promise and Sure, to and with the said insured, her executors, administrators, and assigns, well and truly to pay, or cause to be paid, the said sum insured, to the said insured, her executors, administrators, or assigns, for her estate, within sixty days after due notice and proof of the death of the said John G. Nelson. And in case of the death of the said Emmie Reilly Nelson before the decease of the said John G. Nelson the amount of the said insurance shall be payable after her death to her children, for their use, or to their guardian, if any, within sixty days after due notice and proof of the death of the said John G. Nelson as aforesaid.

Provided always, and it is hereby declared to be the true intent and meaning of this Policy, and the same is intended by the insured upon the express stipulations, that in case the said

John G. Nelson shall die upon the sea, or shall, without the consent of this Company previously obtained, and endorsed upon this Policy, pass beyond the settled limits of the United States, (excepting into the settled limits of the British Provinces of the two Canadian, Nova-Scotia, or New-Brunswick,) or shall, without such previous consent thus endorsed, visit those parts of the United States, which lie south of the southern boundaries of the States of Virginia and Kentucky; or shall, without such previous consent thus endorsed, enter into any military or naval service whatsoever, (the military not in actual service excepted;) or in case he shall die by his own hand, in, or in consequence of a duel, or by the hands of justice, or in the known violation of any law of these States, or of the United States, or of the said Provinces, this Policy shall be void, null, and of no effect.

And it is also understood and agreed to be the sole intent and meaning hereof, that if the declaration made by the said Emmie Reilly Nelson and bearing date the twenty first day of January 1843, and upon the faith of which this agreement is made, shall be found in any respect untrue, then and in such case this Policy shall be null and void: or in case the said

shall not pay the said annual premiums on or before the several days herein before mentioned for the payment thereof, then and in every such case, the said Company shall not be held to the payment of the sum insured, or any part thereof: and this Policy shall cease and determine.

And it is further agreed, that in every case where this Policy shall cease, or become or be null or void, all previous payments made (shown) shall be forfeited to the said Company.

N. B. If Assignments, notice to be given the Company.

In Witness whereof, the said Mutual Life Insurance Company of New York, have, by their President and Secretary, signed and delivered this Contract, this third day of February one thousand eight hundred and forty three

John G. Nelson President
Emmie Reilly Nelson Secretary

declaration, and surrender values were consistently paid on such canceled policies even after hostilities were declared. And, on the basis of this business, representing less insurance and vastly less assets than the holdings of many individual companies of today, there was worked out the practice and the principle of state supervision, of net valuation and of non-forfeiture and the doctrine was also laid down, but not applied, that "after the number of policies and the amount of reserve from premiums become large enough to remove any possibility of loss that will prevent the steady annual increase of said premium reserve, there is no longer any use for guaranteed capital."

The Massachusetts legislatures of 1859, 1860 and 1861 had been earnestly requested by the state supervisors to give to every policyholder the insurance for which he had actually paid and it was urged that by the first non-forfeiture law of 1861 this much was secured and no more, eighty per cent. of the reserve being used to buy extended term insurance on a single net rate, computed according to the Actuaries' Table of Mortality with interest at 4 per centum per annum. The law of 1861 applied to all policies after two full annual premiums had been paid, issued by Massachusetts companies from May 9, 1861, up to January 1, 1881, after which date the law of 1880 became applicable, providing for a paid-up insurance of reduced amount, payable at the same time as the original policy.

In passing, it is sufficient to say that various states have by legislation adopted the Massachusetts policy, that many of the companies in their practice anticipated that legislation in some form or degree and that during the last five years several of the states have prescribed standard policy provisions, including one against forfeiture. In fact, therefore, as compared with a half century back, the conditions as to rates, net valuations,

non-forfeiture and publicity through supervision—all these essentials—are today fixed by statutes and codes and upon them, with incidental modification and subject to greater liberalization, the vast business as it now exists has been solidly and permanently built. The chief modification in more recent years has been the substitution of the American Experience assumption as to mortality for the Actuaries' or seventeen British Offices and the gradually lowering rate, first of $4\frac{1}{2}$ per cent., next 4 per cent., then $3\frac{1}{2}$ per cent. and finally 3 per cent. as the almost universal interest assumption in life insurance work.

Historic Discussions of Great Problems

The standard adopted and quite generally accepted nearly fifty years ago as the test of policy liability and solvency was the Actuaries' 4 per cent. It was, however, recognized—though not always to the point of practice—that equity in dealing with insured individuals was as important as the question of solvency and that corporate condition, tendency and the premiums charged, in which the feature of loading upon the net rates is included, affected the permanency of the companies quite as much as their acceptance of a mathematical assumption and their attempts to observe equity in their adjustments and practice. It was argued in effect even then that the life companies owed a primary duty to the old insured and that the use of surplus to buy new business in great volume involved non-equity. These were subjects which the actuaries of that day were thinking out and they succeeded in reaching very permanent and correct conclusions—conclusions enforced in practice for many years until they were more or less modified by the ambitions of managers to show great volumes of new issues and large statements rather than low cost results. There were discussions as to the manner of loading, as to the mode of computing a surrender charge and as to the

formulae which should govern surplus distributions, but as to these features the practice gradually crystallized into one of positive net valuations only, with the use of the contribution formulae of Homans and Fackler, and into the use of such non-forfeiture systems as each company was compelled to employ by state law or thought it advisable to apply on the advice of its own actuary. It is impossible, however pleasing the task might be, to detail the history of the changing practice in this regard. It is a fact, however, that in more recent years non-forfeiture has been brought within the limitation of a percentage surrender charge, computed upon the face of the policy, modified by competition from ten dollars graded per thousand down to nothing; that net rates have been fixed by law upon an assumption of the American Experience Table with interest at 3 per cent., or $3\frac{1}{2}$ per cent., with liberty to the companies to load net rates as they see fit—which fact, however, has also been negatively influenced by competition—and that the treatment of notes, for either premiums or loans, has gone to the utmost verge of unrestricted liberality. The use of notes, apart from other equitable considerations, induced the use of non-forfeiture.

But with all these discussions of great problems there did not occur much consideration of investments nor was there special attention given to the examination of companies nor to a detailed supervision of their expense accounts. The fundamental importance of the faithful and successful life insurance agent was recognized, as also the fact that multiplication of companies increased the general expense to the public and, further, that every company “that deserves the name must be essentially national.” In recent years also the sound doctrine, announced many years ago, has been applied in practice, that failure to reserve enough will be at the expense of new members and that the result of reserving too much will be to invite new members at the expense of the old.

I have been greatly attracted to one saying of Elizur Wright's, especially in view of the fact that stock companies have been so successful in the United States. He declared in his report for 1863 that "life insurance being still to some extent an experiment, the mutual system, with redundantly large premiums and an equitable method of dividing the surplus, seems greatly preferable to the non-participating plan." The truth of this assertion was a matter of dispute for many years but late events and recent adjustments of annual costs have verified the prophecy—not through the principle of control merely, but because, with the better knowledge, supervision and publicity of the present day, a scientifically and honestly managed mutual insurance places the property ownership in the assured and gives them the economic benefits of experienced results. Logically (and logical practice is now being enforced to the highest degree) mutual life insurance is conducted for the benefit of the policyholder as a true trust, and by the same token the so-called well-established stock companies have also been forced to constantly advance their service and reduce the net cost of insurance through the competition of the mutuals and the demands of the law. The history of the half century has forced the conclusion that the real difference between a mutual and a stock company is not merely one of voting right, but is the difference between control and ownership. Further, and of even more importance, experience has shown that the life insurance itself upon a mutual and equitable net cost, is as low as is practicable, consistent with safety, solvency and continuity.

Fundamental Principles Early Recognized

It was recognized at the outset of active life insurance work in this country that it was indispensable to success that its mathematical assumptions as to net rates and net values should be correct, that its practice as

to the rights of the insured in policy reserves should be equitable and that state supervision should control its publicity. It was also recognized that, apart from vesting ownership and the results of management of companies in the insured, there should be a proper accounting for surplus to the individual. Particularly was it recognized that, as stated in Phillips on Insurance, Volume I., page 60, "an exceedingly indulgent construction in favor of the sufficiency of an insurable interest in a life and in favor of the assignableness of life insurance policies, not based upon a substantive, distinct, valuable, appreciable, insurable interest, tends to convert such contracts into gaming policies. Such a use of these insurances is subject to as great, at least, if not greater, objection as other species of gambling."

Life insurance was built up on the idea of conserving the home, of protecting the widow and children, of self-care and provision against old age. It was in quite recent times that various causes induced the use of its patiently acquired assets as collateral for the benefit of partners and, even more recently still, for the benefit of corporations or impersonal beneficiaries, thus diverting a system of indemnity and service based specifically upon human affections and the instincts of self-protection, into channels of mere commerce and speculation. This transfer of insurable interest, which is not yet fully established in law, is today one of the gravest questions of insurance and one with which legislation must early deal. For it is certain that the issuance of insurance on a single life of millions of dollars, as is oftentimes the case, to be paid for ultimately through a tax upon many thousands of farmers, artisans, clerks and professional men whose insurances average less than \$2,500 in the different companies, is not a sound postulate of economy, of finance, of public policy or of the duty which life insurance trustees owe to their great constituencies.

This question has now passed from one of mathematics, of rate sufficiency, of policy provisions, of surplus apportionments, of supervision as to expense and of publicity to one of insurable interest. The first fundamental problems have been fairly well solved but the question of whether it is a safe public policy to intermix the occasional great corporation insurance, through brokerage, with the average policy of the small insurance holder, still calls for solution. The demand has been induced by the great strength of our leading companies, by their issue of popular low-cost policies, and by a competition among them for new business which is not justified by either the laws of their need, the nature of their origin, the character of their trust or the true interests of their policyholders, based upon the law of average and distributed risk. There ought not to be a union of non-human, impersonal, corporation and speculative risk with home or individual and human insurable interest. The history of life insurance during half a century past reveals great and gratifying advance in both practice and principle, and it is to be regretted that the closing part of the period is characterized by so widespread a failure to recognize the injustice, the non-equity, the moral hazard and the inconsistency of the so-called corporation insurance for extremely large amounts. It is to the credit of the actuaries of the first half of the period that they did not fail to bear witness to the fundamental importance of net values, non-forfeiture, a proper surrender charge and a true insurable interest consistent with public policy, and to the fact that business depends for its existence, not upon unsecured credits, but upon cash.

This whole subject is now under review and, if decided in favor of the impersonal insurable interest, a form of policy will be required adapted to the circumstances and, for the companies which practice it, will involve all the intricate and difficult problems of reinsurance and an independent management.

Problems Involving Moral Hazards

The new legislation of the past five years, prescribing investment limitations and policy provisions and limiting new issues and the expenses of management, has been of an epoch-making character. Other matters of equal consequence to the business are the use of large maximum limits by the companies, the issue of low-priced policies and the admission of speculative insurances and enormous insurances on single lives through the use of reinsurance. It may well be believed that if the companies themselves do not limit this work the results will be so serious as to inspire limitation through legislative acts. The life business with its outstanding volume of both insurance and assets is the property of the people—which here means the average man as society is constituted—and it should not be conducted upon some other theory by making him contribute to the exceptional wealth of a few or to the advantage of an impersonal or corporate business, speculation or stock. As Elizur Wright and George W. Sargent, Insurance Commissioners for Massachusetts, said in their report for 1865, "Human life is too sacred an interest; it has, too, relations besides the pecuniary, too much of the value that transcends arithmetic, and we hear too often of exhumations to test the validity of life policies to trust it to the stock market like coal, copper or petroleum." That fine statement was made when the whole world was kin, as it now is, and with less than \$400,000,000 of outstanding insurance in the twenty-seven companies then doing business in Massachusetts, including substantially all the great companies of today.

The chief purpose here, however, is to point out that the chief and lasting essentials of the business, apart from details of practice and management, were settled with the beginning of this last half century and that the considerations which affect the business today, are its

supervision by the states, the problems supplied by new corporations, the introduction of special policy forms to serve a class, the insurance of impaired lives, the addition of invalid clauses, drastic, multiplied forms of taxation and laws limiting investments, issues and expenses. The old companies have met all demands in a satisfactory manner and are today giving their members an improved service at reduced costs upon well-conceived, old-time, tried-out principles of practice. The new companies must prove their strength and their power to improve upon that service with time or, as is more likely to be the case in the history of most of them, to demonstrate their failure to benefit by the experience of the past.

The Great Growth of Life Insurance

In regard to the subjects of comparative life insurance literature, twisting, rebating, estimates, an improper use of ratios, defective or partial representation and restricted policyholders' service, it may be said that the business has been definitely, constantly and permanently improved. Agency organizations have been perfected upon a stable basis. The subject of life insurance has been introduced in the curriculums of schools of administration and finance. Great and useful societies have been formed by the presidents, the actuaries, the medical directors and the statisticians of the companies. The value and use of insurance journalism have been greatly extended, while the commissioners of insurance for the several states through a union of effort and an improved system of reports have given to the business a greater publicity and a more certain basis for study and understanding than has heretofore been maintained. These successive steps in the progress of life insurance have tended forcefully to its public recognition as something of value to be conserved by the state, advanced by scholarship and deserving in every department of its work of the efforts and attention of the best type of men.

The important application of insurance principles to the service of the policyholders has been achieved in their behalf with a reduction in the costs of insurance upon the basis of an increased asset strength and usually in advance of legal enactments or prescriptions. Recent legislation in practically all of the states—and especially the acts of the last six years—have had, on the whole, a favorable influence on business conditions but in some respects this legislation has set up an imperfect definition of practices already in use by the older and better companies, with incidental additions thereto that will not conserve the interests of the insured nor the opportunities of the hundreds of new companies which have been organized in recent years, if they be strictly supervised.

The publications by the Department of Massachusetts, which have been used primarily in this article as the proper basis for a general review, assigned on December 31, 1909, to the twenty-nine companies operating in that state, excluding weekly premium business, an insurance of \$10,956,928,327, admitted assets of \$3,401,137,665 and a total surplus of \$167,749,886. If weekly premium business be added, the preceding insurance item will become \$13,753,541,779. The returns as of November 1, 1859, of sixteen life companies doing business in the same state included insurance of \$132,740,827 and net assets (which represented actual premium reserves) of \$15,185,016. It is not supposed that the comparison is anything but relative. The figures are quoted, however, to show the great growth of the business in half a century and that the returns are now made by all the companies and are all based upon a vastly greater and stricter actuarial and investment science.

The record of the insurance business has no parallel in human history. It is a monument to the ability, integrity, energy and loyalty of the men who made it and who by this very work have demonstrated, as stated elsewhere,

that "it is possible to hurt but not kill it by an assumption that statutes, instead of human supervision, can maintain or regulate its service to mankind."

The Need of Conservatism

Insurance practice at the close of the half century under review showed a tendency to abandon all surrender charges; to compete for business through a cut in premium rates; to supply as a further soliciting argument a reduced rate on policy loans, and to liberalize the policy provisions relating to days of grace, to abolish all restrictions on occupation and residence, and a trend towards restorations, convertibility and indisputability—in short, to make the policy of life insurance not only unilateral but to make its maintenance or its restoration in case of lapse, and even of surrender, an easy and accessible privilege on the part of the insured. The experience, ability and technical knowledge of the business possessed by their officials will doubtless enable the old and strong companies to assume the burden of these responsibilities and at the same time maintain a low cost of operation. Upon the recently organized companies, however, the many benefits and rights which characterize the modern policy of life insurance which represent the application in its ultimate form of the principle announced fifty years ago, that the insured is entitled to what he has paid for, will bear most heavily as they must meet the competition of the well-established and experienced companies on net cost, on reserve, asset and surplus growth and on all the points of service which these older companies now supply in their perfected policy forms.

The tendency today also is toward reinsurance, which will adversely affect the individualism and independence of the companies which use it; to corporation insurance, which is full of moral hazard and extra mortality risk and will contribute to the breaking down of independent

agency, actuarial, medical and executive self-sufficiency and corporate permanency; to trusteeships in behalf of beneficiaries, which greatly increase the responsibilities of the company without added provision therefor; and to low-priced policies with conversion privileges, which are in fact to some extent concessions to mistaken public opinion of what is best for the general purchaser of insurance.

The evolution of principles, practice, legislative requirements and restrictions in the business of insurance has tended in every way to measure positively and most definitely all items of policy liability, and this fixed responsibility and legal accountability has advanced concurrently with the constant increase in both the number and the value to the insured of policy conditions. The status of life insurance today is, therefore, one of close interpretation, of extremely exacting policy promises, of the most detailed accounting of condition and transactions under oath and of a competition which has narrowed down to a contest of economies, to intelligent management and to the utmost demand for not only maintaining the assumptions of the business but for providing an experience that will make it possible to return good dividends to the insured. The quantity of a company's service to the public is now less considered than the quality, which most of all attests the really great progress which life insurance has made during the period now under consideration. This fact has its confirmation in existing insurance laws, in the great publicity of life insurance affairs, in the announcements and annual reports issued by all the companies and in the universal attention which is now directed to the subjects of insurance and investment computations, the mutual practice in the care and adjustment of old insurances and the actual present and probable future net costs of new insurance. While principles and practice have been crystallized in certain directions, much

without the aid of laws and much also by appropriate legislation and all in the interests of the insuring public, it is equally true that new subjects have come to the front which involve moral hazards and more or less experimental and speculative risk. The old companies, holding large assets and great margins in excess of statutory liability, will most probably solve every new advance in service with success. The new companies, especially those which have been organized upon the theory of large profits and the mistaken principle of appealing to local and sectional prejudice or upon the wholly erroneous principle of "keeping money at home," must be left to the "prudent husbandry of their own resources," as Webster put it, but they may rest certain that they must observe the teachings of experience as to adequate rates, net valuations, selection of risks, surplus margins and a proper expense account, if they mean to lay deep-rooted foundations for a true future success. The history of life insurance during the past half century proves one thing conclusively and has brought it to this pass, that it is a science and not a speculation and that it must be managed in the light of that science and not by chance.

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CHAPTER XVII

THE POLICY

BY LEVI G. FOUSE

Its Origin and Definition

THE word policy means in general a course or plan of action or administration. During the Middle Ages it was used to designate memoranda. In England, it has been applied to "a warrant or ticket for money in the public funds." In the United States it is applied to a gambling game. From these varied definitions and uses has arisen its universal employment to designate comprehensively a written instrument embodying a contract of insurance involving contingencies and probabilities. In life insurance a policy contract is one involving the contingency of death, in combination with interest, in which the minds of the parties have met and agreed upon the terms and conditions of the underwriting.

Life insurance practically had its origin in a contract between two or more parties that was in the nature of a wager. The payer of the premium would win if the insured died within a given period, and the insurer would win if the insured survived such a period.

The first record we have of such a contract shows that it was made June 18, 1583, in favor of Richard Martin, citizen and alderman of London. The subject insured was one William Gybbons, and the contract practically amounted to a wager between Richard Martin and thirteen merchants of the city of London.

A policy on the life of Nicholas Bourne, dated November 25, 1721, issued by the London Assurance Corporation at the request and expense of Thomas Baldwin, is the second authentic record.

Another old contract is on the life of the Right Rev. Carmichael, Lord Bishop of Clonfert, dated June 27, 1754. The insurance was effected by and for the benefit of one George Cockburne at the rate of £5 premium for each £100 insured. Suicide, or death by the hands of justice, or going outside of his Britannic Majesty's dominions of Great Britain and Ireland without first obtaining license in writing voided the contract.

The discovery of the law of mortality, susceptible of mathematical calculation, made it possible to supplant crude guesses at the chances of life and death by tables constructed from mortality observations.

A contract of life insurance must now be supported by a legal insurable interest. That is to say, when the insurance is effected by any person other than the insured the beneficiary must have an interest in the continuance of the life of the insured and not merely a monetary interest in his death.

The contracting parties are usually designated in this country as the insured, the subject upon whose life the policy is written; the insurer, the one who assumes the obligation to pay the insurance; and the beneficiary, the one to whom the insurance is paid in the event of death. There are, therefore, usually three parties to a policy contract.

Individuals under modern methods do not act as insurers. The laws of the several states have provided for the incorporation of insurance companies which have perpetual succession. Individuals die, but properly managed corporations are supposed to live always.

Motives That Should Obtain in Framing Contracts

In order to get at the motives we will take up the considerations involved in the framing of a policy contract. It is, no doubt, true that policies have been framed, with temporary success, having quick returns to the managers

as the principal consideration. Schemes could be cited in illustration of this statement. I shall, however, not undertake to discuss dishonest schemes, but shall address myself to the difficulties involved in legitimate projects.

The consideration of first importance is so to frame the contracts as to perpetuate the existence of the corporation. To this end due consideration must be given to equity and justice, and to protection against dishonesty and fraud.

A policy may be loaded down with unnecessary restrictions. In the earlier days of life insurance, when observations had not been made of the various supposedly hazardous conditions, it was attempted to avoid them by policy restrictions. Many of these have been found to be unnecessary. Some of them are needed, and in a modified form should be retained in the interest of a sound, wholesome public policy and of equity to all policyholders.

While the motives involved in business-getting cannot wholly be ignored, they must be subordinated to the rules of good business, sound public policy, equity and justice. It will not do for those who have the framing of a policy contract to "play to the galleries" by a show of liberality, and thus secure public applause at the expense of policyholders.

The Fundamentals of the Contract

The beginning of a policy contract is a proposal in the form of an application, in which the applicant is required to make a detailed statement of his personal and family history, and such statements are usually made the basis of the contract. If the insured makes material misstatements, he is very much in the same moral position as anyone who obtains a thing of value under false pretenses. Banks, business and manufacturing concerns and individuals alike are protected under the laws against

that class of people. Notwithstanding these general facts, in some states life insurance companies have practically no protection. An applicant in such states may, with malice aforethought, misrepresent a material fact, and because of a prejudicial and pernicious public sentiment, which has invaded the courts of justice, the insurance company will sometimes pay rather than take the chances of greater loss in contesting a claim believed to be fraudulent. At best the binding obligations are all on the company, and both the insurance departments and the courts stand ready to enforce them, while the insured may at will discontinue the contract.

This public sentiment largely ignores the fact that insurance is effected by the money of the policyholders of the company; that, literally, the policyholders are the company, and the officers are merely the managers. It is in part due to a condition which obtained after the Civil War—in the seventies—when many companies were organized by men who knew absolutely nothing of the science of underwriting, and whose numberless blunders forced them to the last expedient of trying to perpetuate the existence of their companies by evading the payment of claims. While these companies ceased to exist many years ago, and while, if anything, the companies at present err on the side of liberality and promptness, the sentiment referred to remains in a modified form.

Under the more recent insurance laws, all statements made by the applicant are, in the absence of fraud, deemed to be representations and not warranties, and no statement can avoid or be used in defense to a claim under the policy unless it be contained in a written application, a copy of which shall be attached to or endorsed upon the policy when issued. If any material statements therein are found to be untrue, then the contract, according to its terms, may be voidable or become *ipso facto*

null and void, and all payments, except as expressly provided therein, are forfeited to the company. The rule, however, is to make the policies incontestable, except for the non-payment of premiums, after from one to two years following the date of issuance.

When the Contract Should Become Effective

Before execution of a policy contract the medical and inspection departments of the company carefully investigate the statements made by the applicant. They determine whether the applicant is insurable, and if so under what conditions. The applicant's financial ability to pay the premiums is also considered. Upon proper certification the executive department executes the contracts. The policy, however, as a rule, does not become binding or operative until delivery to the applicant and acceptance by him during his life time and good health, and the actual payment of the required premium.

Legal Rights Under Policy

The legal rights under a policy vest in the insured or in the beneficiary, depending upon the terms and conditions of the contract. If the insured under the terms of the contract has the right to change the beneficiary, then the latter has a contingent interest only, which does not become vested until after the death of the insured. Hence, under such a contract the title vests in the insured because he can, at any time, substitute his own estate or another beneficiary for the one originally named. If, however, under the terms of the contract the insured cannot change the beneficiary, then the title to the policy vests in the beneficiary and can only be transferred to another by assignment.

Under the laws of most of the states a policy of life insurance, made payable to wife and children, is not liable for the debts of the insured, and hence, though the insured may be insolvent at the time of death, the cred-

itors cannot get any part of the insurance money unless it can be shown that the policy was contracted for after insolvency and that the contract was made to avoid the payment of debts and to defraud creditors.

Completion of Contract

A life policy is not completed until it either expires by limitation or by maturity at the end of a stated period, or by the death of the insured. In the last event proof of death and of claim, as required by the contract, must be made to the company. While many policies provide for payment within thirty or sixty days, it has become the custom of practically all companies to pay the insurance money as soon as satisfactory proof of loss and claim has been made.

The Various Policy Forms Explained

If all men were alike, and their needs and their tastes were the same, one form of policy would suffice. The fact that they are not, has called forth various forms of policies or plans. The underlying principle, it should be borne in mind, is the same in all of them. They represent the development of the idea in different directions, the great superstructure that has been erected upon this foundation principle. In the selection of a plan, it is not so much a question of which is the best plan, as it is, which plan best suits the case in hand. They are all good, but all designed to meet different needs and conditions.

What might be called the staple plans, the four forms of policies that are issued by practically all established companies in America today, are the Ordinary or Whole Life, the Limited Payment Life, the Endowment, and the Term policies.

1. **ORDINARY LIFE POLICY.**—Under this plan the insured pays a fixed premium every year so long as he lives. The insurance is payable at death. Dividends

may be applied annually to reduce the premiums or increase the insurance. This plan is adapted to men who need large protection but who can spare little money.

2. **LIMITED PAYMENT LIFE POLICY.**—This is the same as an Ordinary Life policy except that the total premiums payable instead of being distributed over the whole life, are limited to a fixed period of years, 10, 15, 20, 25 or 30, as the case may be. The policy is then full paid, and its face amount is payable at death. In short, it is a life policy payable in a limited number of premiums. Dividends may be applied as in the case of the Ordinary Life policy, or may be paid in cash at the end of the term. This form is adapted to all classes with whom protection is the chief aim and who are able to pay its cost during their productive years.

3. **ENDOWMENT POLICY.**—An Endowment policy combines life insurance with a secure savings investment at good interest. The amount of the policy is payable to the insured, if living, at the end of a certain term of years, or to his beneficiary at death during that period. Under a life policy the loss is not payable until death. Under a ten-year Endowment, the company must pay the amount at the end of ten years at the utmost. It is clear, therefore, that Endowment premiums must be higher than Ordinary Life or Limited Payment Life premiums.

Endowments are attractive to men and women whose salaries more than suffice for current needs, especially unmarried men or employed women. Small sums can not as a rule be invested to advantage. By depositing them with a life insurance company a sure estate is created that will constantly grow larger.

4. **TERM INSURANCE.**—Term insurance is pure protection for a definite term at the lowest possible cost. Like fire insurance, it covers the risk for the time specified and then ceases. It provides no accumulations to offset advancing age—the insured must assume this burden

—nor does it provide cash, loan, extended insurance or paid-up values. This insurance is offered chiefly to enable an insurer to serve some temporary purpose or to get immediate protection with the privilege of changing when his finances permit.

MISCELLANEOUS FORMS.—Many and varied are the other forms of policies. Most of them, however, adhere in a general way to the four plans just described. Most popular among this miscellaneous group are the Joint Life policy and the Instalment and Income plans. There are also policies combining life insurance with a provision against total and permanent disability, and policies combining protection during productive years with an old-age pension. These latter forms represent some of the recent development of the business, and are, in the writer's judgment, destined to increase in popularity as the years go on.

JOINT LIFE POLICY.—A Joint Life policy usually insures two people for the benefit of the survivor. It may, however, cover more than two lives, or it may be made payable to a beneficiary in whom all the insured are mutually interested. It is most frequently sold to business partners.

INSTALMENT AND INCOME POLICIES.—An Instalment policy provides that the sum insured shall be paid in annual, semi-annual, quarterly, or monthly instalments instead of in one sum. These instalments are distributed over a period ranging from ten to twenty-five years, as may be selected, or may be made continuous throughout the life of the beneficiary. In such a policy the age of the beneficiary is of course a factor—the younger the beneficiary the higher the rate.

One of the most commendable features in the evolution of life insurance is the provision of an income for the beneficiary instead of a specified sum. It is a common occurrence for beneficiaries untrained in investment to

make serious blunders, often resulting in a failure of the purpose of the insured. Authorities have estimated that one-third of the vast sum paid in death claims is dissipated through the beneficiaries' inexperience, improvidence or bad judgment. Instalment or income insurance relieves the beneficiary of the burden of investing the proceeds of the policy,

Non-Participating Contracts

Under existing laws two general classes of life insurance companies are recognized:

1. The companies which issue participating policies only.

2. The companies which issue non-participating policies only.

Non-participating policies are covered by the same general conditions as participating policies, differing merely in the fact that there is no reduction in the rate, the insured having no interest in earnings of any kind, the cost being on the net basis. These contracts are usually issued by stock companies.

Conditions, Privileges and Restrictions

PRIMARY OR FUNDAMENTAL CONDITIONS.—The truth of the statements contained in the application must be a condition precedent to the issuance of the policy. The payment of the premiums when due is fundamental to the continuance of the insurance. Provision is generally made for the revival of the policy in case of default in the payment of the premium if the insured be in good health. Requirement of legal and proper proof that the contingency insured against has happened is also fundamental. The company that will pay a policy without due and proper proof of death and claim is recreant to its trust.

PUBLIC POLICY.—Sound public policy limits the insur-

able ages to the productive period of life, and requires policies to be non-forfeitable for any payments in excess of the current cost of insurance, allowing the companies a small margin for contingencies. It demands a clear and distinct statement of the respective rights of the parties to the contract with reference to the division and disposition of surplus. It requires policies to become incontestable within a reasonable time from date of issuance, except for failure to pay premiums when due, and imposes restrictions in the interests of the general public, such as will discourage and prevent fraud and crime.

EQUITABLE CONSIDERATIONS.—These require the policies which have been issued to be kept, as nearly as practicable, in the same classification of hazards. If the insured voluntarily assumes a hazard known to be great, and not originally contemplated in his contract, the burden of it must either be borne by himself or by other policyholders. Equitable considerations require that every insured should bear his just proportion of such burdens. Hence, in the case of military and naval service in time of war, the extra premium involved by the war hazard should either be paid by the government served, or by the insured, or the policy should be proportionately scaled.

A new hazard resulting from aviation in any of its forms should be provided for in a similar manner, and the policies accordingly framed.

Equitable considerations demand also that an extra premium should be imposed on persons who reside or travel in certain portions of the tropics, where the death rate is fully twice as great as that upon which the premiums are based.

A further and very important consideration, but much neglected, is that every policy should be made to pay its own way, including the expenses of writing and placing it. The policy should be so constructed that the prem-

ium loading the first policy year will be sufficient to pay the expense, and the loading in the subsequent policy years should be correspondingly reduced. The surplus belonging to those already insured should be apportioned to them, and should not be diverted to the payment of expenses incident to obtaining new business.

THE SIGNIFICANCE OF PRIVILEGES.—In a great many policy contracts, conditions and restrictions are referred to as privileges. This use of the word privilege is rather difficult to reconcile with the general proposition of law that that which is not prohibited and comes within the purpose of the corporation is permitted. Therefore, unless a policy contract first limits and circumscribes, there is absolutely no significance to privileges. For example, to say, when there is no limitation as to travel, that the insured has the privilege of traveling or residing in any part of the known world signifies absolutely nothing, as that privilege is granted by its not being prohibited.

AGE LIMITS.—Insurance, as a matter of protection, should be limited to the productive period of life, or to between ages fifteen and seventy. If an aged man applies for insurance, and pays the premiums himself as a means of investment and a method of increasing his estate, then there is no special reason for limiting the age on the level premium, or reserve method, of life insurance. Unfortunately, however, a great many aged persons have allowed themselves to be used as subjects for speculation. The astonishing part is that a selfish, unnatural and depraved desire should sometimes develop on the part of sons, daughters and sons-in-law to insure their fathers and mothers under the assessment or cheaper method in the hope of financial gain from a speedy death.

Between the years 1880 and 1884, in the State of Pennsylvania upward of 200 assessment associations were organized for the purpose of speculating in aged human lives. Through the efforts of the legitimate life insur-

ance companies and associations, the pulpit, the press and the bench, public conscience was awakened, and a law was passed in 1883 which put these speculative organizations out of business within a year. This chapter in the history of life insurance has resulted in the refusal by most companies to insure persons over age sixty unless the policy be of the investment type, and the further refusal to issue a policy if any person other than the insured seeks to effect the insurance or pay the premiums.

A man under proper policy conditions cannot, and would not, if he could, speculate on his own life, and, therefore, when he himself furnishes the money to pay the premiums the transaction is legitimate at any age and free from the suspicion of speculation.

WOMEN.—Repeated mortality investigations have established beyond any question of doubt that, when the speculative and moral hazards are eliminated, women are as good risks as men, if not better.

While there are still companies which charge women an extra premium of about \$5.00 per \$1,000 insurance yearly, most of the companies overcome the hazards by limiting the beneficiaries to minor children or dependents. Such companies have had a satisfactory experience in insuring women.

COPY OF APPLICATION.—In the year 1885 the Commonwealth of Pennsylvania enacted a law requiring a copy of the application, or any instrument referred to in the policy as a part of the contract, to be attached. Other states have done the same. This is a wise and proper provision and is being carried out voluntarily by many companies in states where it is not required. This law and practice are the outcome of litigation. In cases of contest, claimants frequently have not learned until coming into court that a breach of warranty actually existed. It is true, however, that no company would have refused

claimants a copy of the application prior to litigation; and it is also true that the knowledge of the contract given by the attached copy of the application does not deter ambitious attorneys from attempting to enforce payment of claim even in case of material breach of warranty.

DELIVERY OF POLICY.—The provision in all policies, that they shall not become binding until delivery during the lifetime and good health of the applicant and on actual payment of premium, has become, under present methods, an absolute necessity. Courts have even held that in the event of a change in the physical condition of the applicant between the date of application and the delivery of the contract it is the duty of the applicant to give notice to the company of the changed conditions before accepting the contract. The conditions as represented are assumed to be continuous until the consummation of the contract.

Where no consideration has passed and the agent has not given a binding receipt to put the policy in force as soon as the risk is accepted by the company, such decisions as referred to seem just and right. Until he has actually made payment of the premium, the applicant for insurance is in a position to temporize and procrastinate, and he often does. As a matter of justice his delay should be at his own risk and not at the risk of the policyholders.

OCCUPATION.—Restrictions with reference to change of occupation have been materially modified or entirely dispensed with during the last two decades. All companies at the inception of the contract take into account the hazard of occupation and impose conditions or rates to cover it, but it is so rare for men to change from less to more hazardous occupations that the majority of the companies have removed all restrictions, especially after the first policy year. This is particularly true under

deferred dividend policies. In certain states it is difficult to meet the hazard in this practical way. Rating-up to meet the conditions is not now, never has been and never will be popular.

THE WAR HAZARD.—There is wisdom in the maxim, “In time of peace prepare for war,” but long continued peace seems to have impressed a number of companies with the idea that there is no need of being prepared for war, for they have removed all restrictions with reference to military and naval service. At the time of the late Civil War and of the European wars of a generation or more ago, the proportion of the insured to the general population was so small as to produce no serious result to the companies, even if they had no policy restrictions. This condition has been changed; about one-half of the male population is now carrying insurance of some kind. In case of a general or extensive war the companies without restrictions might be wiped out of existence by a few battles. Hence, the removal of all restrictions is simply liberality gone mad. The people who insist upon a “wide open” policy should realize that there is great danger to them in such a policy.

It was my privilege, as consulting actuary for the Army Officers’ Association, to review the records of the United States War Department from the institution of the department to the year 1893. From these records tables were constructed showing the war hazards as well as the mortality in military life. As a result I reached the conclusion that a company which entirely eliminates restrictions in time of war is recreant to its trust.

The restrictions in the policies with reference to military and naval service in time of war are as a rule both equitable and reasonable. The clause which seems to me to be the most desirable requires the payment of an extra premium and a permit, and in the absence of the same, provides for the scaling of the policy in the proportion

of the war mortality to the tables upon which the premiums are based. (A similar provision should be applied to all forms of aviation without permit.)

It is quite possible that with the increase of the insured population, the government might on declaring war make provision for the payment of the extra war hazard premiums of the insured who enlist, in lieu of subsequently pensioning the widows of deceased soldiers. The details of such a scheme could be worked out successfully.

SUICIDE.—It has been assumed that a sane person will not commit suicide, and that therefore it should not be made a defense to a claim under the terms of the policy. This has again and again been demonstrated to be a fallacy. While a certain proportion of suicides are no doubt irresponsible, the great majority are rational and thoroughly conscious of what they are doing. The proof of this lies in the statistical fact that companies and societies with no suicide clause have experienced, in the first few policy years, from three to five-fold greater percentage of deaths by suicide than in subsequent years. The deaths have not always been designated as suicidal, but the remarkable fact remains that the so-called accidental deaths have been much greater in the first than in subsequent policy years. If this is not due to a conscious selection against the companies, then how else can it be accounted for? Again, some of the fraternal societies by adopting a suicide clause have materially reduced their percentage of suicides.

It is exceedingly difficult, in cases where suicide is suspected, to get the true cause of death properly stated in the proofs of loss and claim. Suicide at once becomes a stigma upon the family, and because of this, and because a frank admission might defeat the recovery of insurance, every means is resorted to to conceal the true cause of death.

In the interest of good morals and the elevation of the

human race every policy of life insurance, for at least a year, should impose a penalty for death by suicide.

DUELING AND VIOLATION OF LAW.—The restrictions with reference to dueling and violating law, or death by the hand of justice, have either been entirely removed or so modified as practically to amount to nothing. Happily, dueling is now regarded as cowardice and not bravery, and it is so seldom resorted to that its elimination from the life insurance contract is entirely practical. There is, however, a form of violation of law which has become quite serious in some states, and for which no remedy has been found. I refer to the feuds. As a result of them a number of policyholders have been murdered in cold blood and innocent policyholders have had to bear the expense. Indeed, there are sections of our country where the life companies have for a time declined to do business. Feuds create conditions that cannot be met by policy restrictions.

INTEMPERANCE.—The great care exercised by the companies generally in the selection of risks, excluding all persons of questionable habits, renders a policy clause against intemperance practically of no value. This is why a large proportion of the companies have no provision against intemperance.

TRAVEL AND RESIDENCE.—The improvement in sanitary conditions and in the means of travel has justified the companies in eliminating most of the restrictions upon travel and residence. About one-half of the companies have no restrictions whatever. A man can take out a policy in this country today, pay for it, and tomorrow travel to and reside in a country where the mortality is admittedly two-fold. I fully agree, because statistics show, that a restriction in the temperate zone is unnecessary, but I question the justification of allowing persons to take out policies in the temperate zone at regular rates, and then permitting them to live in the fever-stricken

sections of the tropics without requiring an extra premium. No argument is necessary beyond the statistics of those American companies which do business in the tropics. While it is true, they collect a larger premium, it is also true that about 50 per cent. of this larger current premium is required to pay the current losses, while in the temperate zone about 25 per cent. of a smaller premium is sufficient. Hence, the more conservatively-managed companies incorporate some policy restriction to neutralize the effect of objectionable residence and travel either in portions of the tropics or in portions of the frigid zone.

INCONTESTABILITY.—Every applicant should personally become responsible for the truth of his own statements for at least a limited time without entailing on the other policyholders the expensive investigations necessary if the policy were incontestable from its date of issue.

There are not only common law questions, but questions of public policy involved. As a common law principle fraud vitiates contracts. As a matter of public policy, no man should be allowed either for himself or his dependents to profit by his own fraud.

Practically all policies now become incontestable either one or two years after date of issuance. This gives a company the opportunity of verifying statements upon which the contract is based; if it finds them to be untrue or fraudulent, and the insured does not surrender the policy when called upon to do so, equity proceedings are usually instituted to compel its surrender.

The courts have held such policies, after the lapse of the contestable period, to be absolutely incontestable, because the company has reserved to itself a period of time to investigate and discover any false or fraudulent statement that would vitiate the policy. If it fails to investigate and discover, the fault is its own and, therefore, it

cannot avail itself of the common law principle, that fraud vitiates all contracts.

GRACE IN PAYMENT OF PREMIUMS.—The feature of grace in the payment of premiums had its origin in the desire of the companies to do all they could, within the limits of safety, to avoid lapses. Its principal effect, however, has been to postpone the last day of payment, or the final due date. If a policyholder instead of using the days of grace as a margin to avoid lapse gets into his mind that instead of the final day of payment being March 1st it is March 30th, and procrastinates accordingly every year, he loses all the benefits of the feature.

NON-FORFEITURE AND DIVIDEND PROVISIONS.—The non-forfeiture and dividend provisions, as also those covering payment of claims, are features upon which there is such a degree of unanimity and such uniformity of practice that there is little to be said beyond what will be disclosed by the examination of the policies of any reserve company.

In a general way, however, I will say that cash surrender values are liable to defeat the very purpose of protection for which insurance stands, and to encourage selection against the company as well. The non-forfeitable values, through competition, have become liberal to a fault. A company that imposes a penalty for discontinuance, in my opinion, will best serve its persisting policyholders.

The dividend clauses, whether annual or deferred, should be explicit, direct, unequivocal and enforceable. A contract that does not clearly and distinctly draw the line between surplus and distributive surplus, and, without some governing, fundamental principle, leaves the directors of the company in the future to determine what surplus is or is not distributive, is objectionable.

The ideal policy stipulates the governing principle

which, in the matter of distributing profits, shall be binding both upon the insurer and the insured.

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CHAPTER XVIII
PREMIUM RATES: THEIR CALCULATION AND
RELATION TO OTHER ELEMENTS OF THE
POLICY CONTRACT

BY J. BURNETT GIBB

IN a policy contract there is set forth the obligation on the part of the Insurance Company in relation to the payment of the sum insured on the one hand, and on the other the sum which the company receives as the consideration for the obligation incurred. This consideration is called the premium rate, and it may be either a single payment or a payment spread over a number of years. The mathematical or net premium is calculated from what are called life tables, formed by combining tables of interest with tables of mortality, the construction of which involves the doctrine of average and the theory of probabilities. To the net premium is added a sum for expenses and contingencies and the resulting amount represents the office rate of premium charge. Perhaps the most vital requirement in life insurance is that the company shall charge premium rates which are adequate and after giving some consideration to the principles which govern their calculation, we may proceed to show the relation thereto of the expenses incident to the conduct of the business, of the reserve which a company must hold as a liability under the laws of various states, of the non-forfeiture provisions contained in the policy and of other ramifications of the business, such as dividend distribution, all of which have a very important relation to the premium rates charged by a life company.

Interest Element in the Mathematical Premium

IN the calculation of premiums it is almost invariably assumed that interest is compounded annually, and in the

following discussion this assumption will be made. Let P denote the principal sum and i the rate of interest. The amount of P at the end of one year is: $P \times (1 + i)$; at the end of two years, $P \times (1 + i) \times (1 + i) = P (1 + i)^2$, and if S denote the amount to which P has accumulated at the end of n years, we have

$$S = P (1 + i)^n \quad (1)$$

Let v denote the present value of 1 due at the end of a year, then since 1 amounts at the end of a year to $(1 + i)$, therefore, $\frac{1}{1 + i}$ will amount at the end of a year to 1 and

$$v = \frac{1}{1 + i} \quad (2)$$

Similarly, if v^n represents the present value of 1 due at the end of n years

$$v^n = \frac{1}{(1 + i)^n} \quad (3)$$

Let d be the discount on 1 for a year, then d is equal to the difference between the sum due and its present value, or

$$d = 1 - v = 1 - \frac{1}{1 + i} = \frac{i}{1 + i} = vi \quad (4)$$

Also, since $d = 1 - v$, therefore, $v = 1 - d$. (5)

By giving to n in v^n successive values from 1, 2, 3, . . . to n and summing these values we obtain the present value of a series of yearly payments for a period of n years—called an Annuity-Certain

$$a_n = v^1 + v^2 + \dots + v^n \quad (6)$$

The Mortality Element

A Mortality Table has been defined as the instrument by means of which are measured the probabilities of life and the probabilities of death. It has been shown by various investigations that the chance of death at any age of a person in average health is a very definite quan-

tity. The exact date of death of the individual cannot be foretold, but if we have a large number of persons of the same age it is possible to foretell with great accuracy that a certain number will probably die in the first year, a certain number in the second year, and so on until all are dead. It must be kept very clearly in mind that the science of life insurance is based on the law of averages, and when we hear such expression as that the expectation of life of a person age 40 is 28.18 years, it does not mean that an individual age 40 may expect to live exactly 28.18 years, but only that if a large number of persons were traced from 40 to the end of life, their average lifetime from 40 until death would approximate to 28.18 years.

A Table of Mortality contains the following columns: first, a column showing the number of persons living at each age, l_x ; second, a column showing the number who die at each age, d_x .

Let us take the American Table of Mortality for illustration. At age 10, the commencing age of the table, an arbitrary number, 100,000, was taken, and the first column, l_x , shows opposite each age the number who survive at each age out of this original 100,000.

The second column, d_x , gives the number who die at each age, and can be got by differencing the numbers in the living column; for example, at age 40 the number living is 78,106, and at age 41 the survivors number 77,341; the difference between these numbers, 765, is the number who die in the year of age 40; thus we have

$$l_{40} - l_{41} = d_{40}$$

The number of survivors gradually diminish to 3 at age 95, and as 3 are assumed to die in the following year, there are no survivors at age 96, which is the limiting age of the table.

A table of mortality is constructed by tabulating for a large number of persons the ages at the time the observations commence, the period of time during which the life

is under observation, and the number of deaths occurring at each age. Then the number of lives which attain each age is tabulated opposite each age, and the number of deaths is put opposite the age at which the death occurred. Next the number of deaths opposite each age is divided by the number living at that age, and we obtain the probability of death at individual ages, denoted by q_x . This value is usually somewhat irregular and is smoothed by a graduation formula. Then the arbitrary number assumed to be living at the initial age of the table—age 10 in the American Experience Table—called the radix, is multiplied by the probability of dying at that age, giving the number to be put in the d_x column, this number of deaths is subtracted from the 100,000, and the number left surviving, 99,251, is multiplied by the probability of dying in a year at age 11, and so on to the limit of the table. The following extract from the American Table of Mortality will show how the number of survivors diminish and how the death rate runs:

Age	Number living	Deaths	Probability of Death in a Year.
10	100,000	749	.007490
20	92,637	723	.007805
30	85,441	720	.008427
40	78,106	765	.009794
50	69,804	962	.013781
60	38,569	2,391	.061993
70	847	385	.454545
80	462	246	.532468
90	216	137	.634259
100	79	58	.734177
110	21	18	.857143
120	3	3	1.000000
130	0	0	

By means of the theory of probabilities we measure the chance of an event happening, and the most convenient

way of representing this chance mathematically is by means of a fraction.

An examination of the American Table of Mortality shows that of the 100,000 lives who start at age 10, 69,804 survive at age 50, thus the probability that a person at age 10 will attain age 50 is $\frac{69,804}{100,000}$. The probability that a person age x will live n years is denoted by ${}_np_x$, and that a person age x will die within n years is denoted by ${}_nq_x$.

$${}_np_x = \frac{l_{x+n}}{l_x} \quad (7)$$

$${}_nq_x = \frac{l_x - l_{x+n}}{l_x} \quad (8)$$

Equation (8) may be explained as follows: at age x the number living is l_x , at age $x+n$ the number living is l_{x+n} , the difference $(l_x - l_{x+n})$ gives the number who die between ages x and $x+n$, and dividing this by l_x , the original number living, gives the probability that a person age x will die in the next n years.

Calculation of the Net Premium

LIFE ANNUITY. To find the value of 1 to be received by a person now aged x , provided he live to the end of a year, we have to multiply the present value of 1 due at the end of a year by the probability that (x), which we will understand to mean a person aged x , will be living at the end of a year, and we obtain from (7) the result $v \cdot \frac{l_{x+1}}{l_x}$; if the amount is to be received at the end of n years, only in event of survival, the value called a Pure Endowment is

$${}_nE_x = v^n \cdot \frac{l_{x+n}}{l_x} \quad (9)$$

A Life Annuity is a periodical payment of money to be made to a person provided such person is alive at the

time the payment falls due. It is, in fact, a series of Pure Endowments, payable at the end of successive years, the consideration being a cash payment down. Giving to n in (9) all values from 1 upwards and again assuming the present age to be x , we have the value of a Life Annuity,

$$a_x = \frac{vl_{x+1}}{l_x} + \frac{v^2 l_{x+2}}{l_x} + \frac{v^3 l_{x+3}}{l_x} + \dots \quad (10)$$

From this we see that the value of a Life Annuity may be calculated by multiplying together the factors contained in an interest table and a mortality table, but the process would be very laborious. By means of a simple device much labor is saved. Let us multiply both numerator and denominator of the right hand side of (10) by v^x , then we have

$$a_x = \frac{v^{x+1} l_{x+1} + v^{x+2} l_{x+2} + v^{x+3} l_{x+3} + \dots}{v^x l_x} \quad (11)$$

Denote $v^x l_x$ by D_x , and we obtain

$$a_x = \frac{D_{x+1} + D_{x+2} + D_{x+3} + \dots}{D_x} \quad (12)$$

Again let the summation of $D_x + D_{x+1} + D_{x+2} + \dots$ to the limit of the table be denoted by N_x and we finally have

$$a_x = \frac{N_{x+1}}{D_x} \quad (13)$$

The form of the N column where N_x represents the summation of $D_x + D_{x+1} + D_{x+2} + \dots$ must be carefully distinguished from the form $N_x = D_{x+1} + D_{x+2} + \dots$ which was used in the earlier British tables, but has not been received with much favor in the United States, where the form $N_x = D_x + D_{x+1} + \dots$ has been found more convenient.

The values D and N are tabulated in columns and with other values to be mentioned later, form what are called

commutation columns. These values have no special meaning in themselves, but their tabulation has enormously reduced the labor of life insurance calculations. If the first payment of the annuity is to be made at once we have

$$a_x = 1 + a_x = \frac{N_x}{D_x} \quad (14)$$

ORDINARY WHOLE LIFE INSURANCE. To find the value of 1 payable at the end of the year of death of (x), the first year the value of the insurance is $v \cdot \frac{d_x}{l_x}$; the second year $v^2 \cdot \frac{d_{x+1}}{l_x}$, and so on.

Denote the single premium for ordinary life insurance of 1 by A_x and we have

$$A_x = \frac{v d_x + v^2 d_{x+1} + v^3 d_{x+2} + \dots}{l_x} \quad (15)$$

Again multiplying above and below by v^x and denoting $v^{x+1} d_x$ by C_x and the summation $C_x + C_{x+1} + C_{x+2} + \dots$ by M_x , we obtain

$$A_x = \frac{v^{x+1} d_x + v^{x+2} d_{x+1} + v^{x+3} d_{x+2} + \dots}{v^x l_x} \quad (16)$$

$$= \frac{C_x + C_{x+1} + C_{x+2} + \dots}{D_x} \quad (17)$$

$$= \frac{M_x}{D_x} \quad (18)$$

The annual premium for an ordinary life insurance is payable for the whole of life and to find the annual equivalent for the single premium we have the following equation, in which we equate the benefit to the payment

$$P_x (1 + a_x) = A_x$$

$$\text{therefore } P_x = \frac{A_x}{1 + a_x} = \frac{\frac{M_x}{D_x}}{\frac{N_x}{D_x}} = \frac{M_x}{N_x} \quad (19)$$

It will be noticed that the annual premium is obtained by dividing the single premium by an annuity where the first payment of the annuity is taken as payable at once. This applies to all premiums and is due to the fact that life insurance premiums are always payable at the beginning of the policy year. For the usual forms of policy contract, such as Limited Payment Life, Endowment and Term insurance, the net premiums have been tabulated at each age for most of the standard tables and are available without the necessity of making a calculation. By the construction of other commutation columns and in some instances by the use of summation formulas involving the integral calculus, values may be obtained for other and more complex forms, but it is beyond the scope of the present paper to go more deeply into the purely mathematical part of the subject.

Standard Mortality Tables and Interest Rates Used in the Calculation of Premiums

In this country the regular legal reserve companies base their premium rates on one of two tables; either the Actuaries' or Combined Experience Table of Mortality, or the American Experience Table of Mortality. Within recent years the latter table has been adopted as the reserve standard for new business in most of the States and this has resulted in the same table being used in the calculation of life premiums. In Great Britain and Canada the tendency has been to use either the "HM" or "OM" Mortality Tables. These tables were deduced from the experience of the British Life Companies, while the American Table previously referred to was based, to a large extent, on the experience of the Mutual Life Insurance Company of New York, eliminating the early years of the policy so as to give what is known as an "ultimate table" or a table which will fairly represent the mortality experienced amongst insured lives after the

effect of medical selection has worn off, which is usually assumed to be in about ten years from the date of issue of the policy.

The Actuaries' Table shows a heavier ultimate rate of mortality on the whole than is experienced by companies making careful selection of their risks, and the table has been to a great extent superseded by the American Table, which, at the present time, is the standard mortality table of the United States.

The next factor to be considered is the rate of interest to be assumed as a minimum interest-earning throughout the lifetime of the policy. The usual assumption is either 3 per cent. or $3\frac{1}{2}$ per cent. By combining a rate of mortality with an assumption of interest-earning as above, a net or mathematical premium can be calculated which will represent the exact cost (exclusive of commission and administrative expense) of a life policy, provided the company experiences exactly the rate of mortality shown by the table and earns exactly the rate of interest assumed in the calculation. Naturally the higher the rate of interest is taken, the lower will be the net premium. The following table shows the difference at the age of 35 in the net annual premiums on the American Table at 3 per cent. and $3\frac{1}{2}$ per cent. interest:

	3% Basis	$3\frac{1}{2}\%$ Basis
Ordinary Life.....	\$21.08	\$19.91
10-Payment Life.....	49.73	44.78
20-Payment Life.....	29.85	27.40
10-Year Endowment.....	89.30	87.02
20-Year Endowment.....	41.97	40.12

As life insurance contracts usually run over a long period of years, it would seem that the rate of interest to be assumed should not exceed $3\frac{1}{2}$ per cent. and that

3 per cent. is a good conservative rate for companies whose policies participate in the surplus earnings of the company. If the company earns a higher rate than that assumed in determining its reserve liability, which is usually calculated at the same rate of interest as that used for computing premiums, the excess interest earned forms a source of surplus applicable for dividend payments. For policies which do not participate in surplus, a somewhat higher rate of interest is frequently used in calculating premiums than that adopted for computing rates for participating policies.

Loading Element

In the calculation of office premiums a third factor called loading must be added to the factors previously considered, namely, the mortality element and the interest element. Up to this point we have only dealt with the net or mathematical premium, in which there is no provision for expenses or contingencies. In the procurement of new business and in the care of the old there is necessarily incurred some expense. It is usual to pay to the agent procuring business a portion of the first premium as a commission and in addition for some years a smaller percentage of the renewal premiums. To this expense, of course, has to be added the home office expenses, such as the fee for the medical examination, the cost of writing the policy, and an allowance for clerical work in the collection of renewal premiums, besides State and other taxes. Returns to policyholders in the way of dividends have also come to be such a recognized part of the system of life insurance that the addition to the net or mathematical premium, called the loading, is usually made sufficient to insure a surplus. When the company returns dividends representing excess payments made over those required, the actual cost to the member is frequently eventually reduced even below the net prem-

ium; the member getting the benefit of the actual rate of interest earned, the actual rate of mortality experienced, and paying his equitable share of the expenses. With this in view it will be understood that it is essential that the contract rate should always be adequate, because when the rate charged is larger than necessary, the actual payment may be reduced by a dividend, whereas if the rate is too small there is no source from which the company can draw to make good the deficiency without courting disaster. The loading is also intended to cover fluctuations in interest earnings and mortality which may occur throughout a long series of years. The method of loading has varied from time to time and there is even at the present time by no means an unanimous agreement as to which is the best method. In the early days it was usual to add a uniform percentage to the net premium; the objection to this is that it made the rates very heavy at the old ages and burdened the older members with a considerably increased loading when many of the expenses, such as the cost of medical examination and the writing of the policy are the same whether the entrant be old or young. Another method would be to add to the net premium a constant amount irrespective of age. This procedure, of course, is exactly opposite in effect to the one just mentioned, as it makes the loading relatively much heavier on the young entrant than on the old. A method which has come into great favor is to load the net premium for the particular contract with a certain percentage of itself and, in addition, to add a certain percentage of the ordinary life net premium. For example, on a 20-Year Endowment the gross or office premium might be made as follows, at the age of forty:

American 3% net premium for 20-Year Endowment	\$43.01
Add 12 ½%	5.38
Add 12 ½% of net Ordinary Life premium (\$24.75)	3.09
Gross Premium	\$51.48

This method has the advantage of being very elastic, as the percentage on the net premium for the contract and the percentage of the Ordinary Life net premium added thereto may be varied so as to produce practically any results desired. Several companies increase their basis of loading at the older ages of entry, as it is believed that medical selection has a less effect in keeping the mortality below the tabular in the case of old lives than where the entrant is young.

Another method of loading would, of course, be to combine a constant and a percentage method. Take the same form of policy as above; on a 20-Year Endowment policy at age forty the office premium may be made as follows:

American 3% net premium for 20-Year Endowment.....	\$43.01
Add constant.....	3.00
Add 15% of the above total.....	6.90
Gross or Office premium.....	\$52.91

Disposition of the Office Premium

From what has been stated it is possible now to arrive at a clear conception as to the division of the office premiums which are paid to the company. The various expenses incidental to the business, including commissions, medical fees, and home office expenses, form one source of outlay. The death claims incurred naturally have to be met. There has to be set aside a certain part of the premium for reserve, and any remaining portion goes to the surplus account to be allotted as dividends, or to build up a contingency reserve to provide against unfavorable years' experience in mortality, or interest earnings.

RESERVES. The reserve on a policy is the sum which the office must have in hand to provide for the future liability under a contract which is not covered by the value of the net premiums still to be received, and this reserve is derived from the accumulation of the net prem-

iums already received which have not been used in previous years for the cost of insurance. Taking the case of a whole life policy with level annual premiums, as the risk of death increases as the age advances, the net premiums charged in the early years are greater than are necessary to cover the insurance risk, but this excess must be husbanded for the later years when the advancing age will bring with it a rate of mortality higher than could be met by the net premium payable if it were not reinforced by a reserve accumulated in the earlier years. Under Endowment policies where the sum insured is payable at the end of a certain number of years even though the death of the insured has not occurred, it is necessary each year to set aside an additional sum so that when the endowment period expires the reserve will have accumulated to an amount equal to the sum insured. Under Term or Temporary Protection policies, which have come more into prominence in recent years, there is practically no reserve at any time throughout the period of the policy, unless it is issued at an old age and for a considerable period of years. Where a Term policy runs for a definite number of years and then expires, the reserve works down to zero coincident with the date of expiry. The lower the rate of interest assumed in the calculation of the reserve the higher will be the reserve. For example, a reserve based on 3 per cent. interest will be larger than one based on $3\frac{1}{2}$ per cent. interest, as under the first assumption it is only necessary that the company should earn 3 per cent. on its investments in order to fulfill the contract; whereas, under the latter a minimum return of $3\frac{1}{2}$ per cent. interest is necessary. It is apparent that a larger sum must be set aside each year out of the premiums where the amount is to be invested at the lower rate.

NON-FORFEITURE VALUES. The present day contracts almost invariably provide that in the event of the discon-

tinuance of the policy by non-payment of premiums the owner of the contract shall have three options: first, a cash surrender value; second, a paid-up policy; or third, extended insurance carrying the policy for a term of years without the payment of premiums, at the end of which time if the insured is still living the company's risk terminates. Each of these non-forfeiture values is based on the amount of the reserve. In some instances a small deduction is made particularly in the earlier years of the policy, the idea being to protect the other members from suffering loss by withdrawal of a fellow-member before he has contributed sufficient to cover the cost of his admission, which, of course, is much heavier in the first than in the later years. The non-forfeiture values allowed at the present time are very much more liberal than those allowed some years ago. At one time it was quite a usual practice not to allow a value of any kind until a policy had been in force for at least five years and even then such value was much less than the sum represented by the individual policy reserve. Competition between the different companies has entirely changed these conditions and it is certain that the non-forfeiture values allowed today cannot be criticized for lack of liberality. It is the opinion of many students of life insurance that the companies have gone to an extreme of liberality in this direction, but it has always been hard to persuade a policyholder that he should not have control over practically all of the reserve accumulated from his premiums, and again the old theory that only the healthy lives withdrew from a company leaving a large proportion of impaired lives, has been to a great extent discredited. The belief today is that in most instances the lapsing of a policy is due more to bad financial conditions than to any other cause, and that on the whole withdrawing members do not exercise a bad effect on the

company's mortality except perhaps in instances where the company's standing is in question.

DIVIDENDS OF SURPLUS. A dividend of surplus is made up from three main sources: first, the margin from a more favorable mortality experience than that called for by the table of mortality employed in the calculation of the premium; second, from a higher interest earning than that assumed in the calculation of the reserve; and third, from the margin afforded by a lower expense rate than that provided for by the loadings on the premiums. There are other, incidental sources of surplus such as deductions made from the full reserve at the time a policy lapses; but these sources of surplus are gradually disappearing, and certain privileges given without charge in some companies, for example, allowing thirty-one days of grace for the payment of premiums without interest, will soon altogether counteract any profit arising in this manner.

Mortality Investigation

Included in the work of the Actuarial Department is the making of investigations into the rate of mortality experienced in different sections of the country and on different forms of policies. In such investigations it has, of course, to be kept in mind that too minute sub-divisions may through accidental fluctuations show results that are not entirely reliable as guides for the future. The figures, therefore, should be carefully analyzed by one who is thoroughly familiar with statistical insurance work in order that misleading deductions may not be formed. Some companies charge extra premiums for certain classes of occupation and also do foreign business classifying their risks in tropical and semi-tropical countries and charging special premiums according to the mortality which they have experienced among such classes.

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CHAPTER XIX

SETTLEMENT OF LOSSES

BY GEORGE C. MARKHAM

WHEN the owner of a building purchases a fire insurance policy he is buying indemnity against financial loss by fire. If a fire occur the adjustment of the damage is a complex question requiring expert knowledge of values, to say nothing of a high degree of diplomacy and alertness. On the other hand, a policy of life insurance is primarily a contract to pay a certain sum of money upon the occurrence of a specified event.¹ This event may be either the death of the insured as in the case of a life policy, or the survival of the insured as in the case of an endowment policy, payable because the insured is alive on a certain day. If, however, the insured has complied with all the provisions and requirements of the contract, and no fraud has been practised, then the whole sum of money contracted for is due and payable either to the insured, his estate, or to a designated beneficiary under the legal limitations as to insurable interest. No question of indemnity or adjustment of damage enters into the settlement of such claims.

To a greater degree than is the case with fire, marine, accident or other forms of pure indemnity the primary object of a life insurance policy is its payment as a claim. Death is not an avoidable accident but an ultimate certainty, the happening of which is reducible to fairly accurate mathematical expression. This fact and its consequences distinguish life insurance from other forms in a number of ways. Having once accepted a life risk the company binds itself to continue as long as the insured desires. The disaster insured against by life insurance

¹Cent. Bank v. Hume, 128 U. S. 195.

involves a personal element not present in the case of property insurance, which still further distinguishes the former. This personal factor is especially prominent in the initial investigation of the risk offered. The company must satisfy itself of the insurability of the risk by careful inquiry into the physical condition, family history, habits, and the moral hazard as related to financial and social situation. To a large extent its decision must rest on the personal statements of the applicant. The personal element appears again in the adverse selection, or selection against the company. (Effects of Selection, E. McClintock, 1892.) Such selection follows from the natural tendency of human nature to make the best possible bargain, to present its interest in the most favorable light, as well as the practice of deliberate fraud in concealing or misrepresenting important facts affecting the risk. It is present when the applicant selects the plan of his insurance, when he answers the questions of the medical examiner and likewise when as a policyholder his decision to pay his next premium is influenced by his knowledge that he is an impaired risk. The company, but not the insured, is bound to continue the contract in force regardless of the then condition of the risk. "The doctor rejects for us the bad lives, but the very best lives do not come in their full proportion, and of the men who do come in there may be many who know themselves to be 'shaky' which 'shakiness' the doctor does not detect and that 'shakiness' turns up a few years afterwards in the shape of influence on the mortality experience." (G. W. Berridge, *Journal Institute of Actuaries* XX, 276.)

Until very recently applicants for life insurance were required to warrant the truth of all statements made by them in the application and medical examination. Any misstatement of fact in the application and medical examination, whether material or not, was held under the law

of warranty to give the company legal grounds upon which to avoid payment.¹ Harsh as this provision may seem in the light of present life insurance practice it should be considered that the companies felt they were very much at the mercy of the applicant, upon the truth of whose representations the contract must depend. This feeling of defenselessness created a fear quickened by the fact that company managers were at that time traveling unknown roads with meager facilities for investigation and inspection of risks. Under these circumstances the reliance necessarily placed on the statements of the applicant made at the inception of the contract called for relatively extensive statements in the proofs of claim submitted after the death of the insured. This was not only to establish the facts of age, identity, death, and proof of interest, but in order that the reliability of the original information might be tested by the statements of the claimant and others most likely to possess accurate information regarding the deceased. While any deviation of the facts from the original statements of the insured that might be brought out by the claim papers formed, under the rigid warranty and contestability of the contract, a basis for legal defense by the insurance company, it must not be supposed that life companies in good standing were as harsh in their practice as their contracts permitted them to be. No class of institutions is more dependent than life insurance companies upon public opinion for its prosperity, and public opinion never permitted the life companies desiring the good will of the people to contest claims on the technical basis of misstatements of matters wholly immaterial to the risk and which would have made no difference in the issue of the policy had the facts been correctly stated in the application. On the contrary the officers of life companies have always been inclined to pay doubtful cases rather than

¹Hutchinson v. Ins. Co. (Texas) 39 S. W. 325.

subject the company to criticism by persons not acquainted with the theory and practice of life insurance. "The great trouble with life insurance companies is, not that they seek to avoid the payment of just claims, but that they too frequently pay claims which should have been resisted."

During the past half decade important changes in insurance practice have taken place. The facilities for the inspection of risks have been perfected in some degree though it is still difficult to obtain reliable information on some important points. Rapid communication by telegraph and telephone, the great extension of the banking system and commercial credits contemporaneous with settlement and development, have tended to knit the entire insuring population into what Herbert Spencer called a "coherent heterogeneity." Thus, in passing upon risks, life insurance companies have to a larger extent than formerly been enabled to substitute facts for possibilities. Consequently they have felt justified in binding themselves to pay the policy after a certain period regardless of the original facts. Through the pressure of enlightened competition the period during which the policy is contestable for misrepresentation has been gradually reduced to one or two years. During that period the company is supposed to have its chance of thorough investigation. Two well known companies proposed to abolish contestability entirely, making their contracts incontestable from date of issue, but this radical practice resulted in some heavy losses by the death of bankrupt suicides and was shortly abandoned as conducive of "criminal selection."¹ For much the same reasons official opinion has changed as to the real necessity of requiring an applicant to warrant the truth of his

¹Reagan v. Ins. Co. 189 Mass. 555; 76 N. E. 217.

Welch v. Ins. Co. (Ia.) 78 N. W. 853.

Holden v. Ins. Co. 191 Mass. 153.

Ins. Co. v. Fox (Tenn.) 61 S. W. 62.

every statement, however immaterial and unimportant, and courageous executives have voluntarily eliminated the warranty from their contract. It was recognized that under modern conditions companies could and should fairly assume more risk and that it was unnecessarily harsh to insist upon this relic of insurance barbarism. As usual, this concession on the part of company management anticipated mandatory legislation. The so-called Armstrong Committee laws enacted by the New York Legislature in 1906 contained the provision that the policy shall contain the entire contract and all statements purporting to be made by the insured shall, in the absence of fraud, be deemed representations and not warranties. (Sec. 58, Ch. 33 Ins. Laws 1909.) The distinction of terms is, in effect, that the warranted statement must be true regardless of materiality, while a representation need only be true substantially in all matters material to the risk.¹ A similar provision has been enacted in a number of other states, notably Louisiana, Massachusetts, Michigan, Minnesota, New Jersey, North Dakota, Tennessee and Wisconsin.

With policy contracts specifically incontestable after one year and valid within that period except in cases of suicide, fraud or misstatement of facts concerning points material to the risk, the question may be asked why in case of death after one year the proofs of death required should demand any statements beyond those necessary to establish the identity of the deceased, the facts of his demise, his correct age and proof of claimant's interest? The answer is that skillful selection of risks is based not entirely upon the personal opinions of the medical officers of the company but upon a vast and growing body of statistical data. It is for the benefit of this mortality data as an aid to the just selection of

¹Miller v. Ins. Co. 31 Ia. 216.

Jeffries v. Ins. Order (Mo.) 53 Atl. 1102.

Higby v. Ins. Co. 53 N. Y. 603.

risks and the introduction of suitable safeguards when found necessary that the insurance company must and is entitled to ask for very complete statements of facts and circumstances before payment of claim. Furthermore, the information obtained is necessary that the company may test the efficiency of its agents and medical examiners. An applicant may be ignorant of the existence of a disease, in which case the company is forced to rely upon the skill and care of its local examiner while it relies on its agent to see that risks undesirable for other reasons are not misrepresented to the company. Another point might well be urged in justification of the amount of detail commonly asked for, namely, the fact that in computing the premiums charged it is assumed that the claim is not payable until the end of the policy year in which death occurs or, on the average, six months after death. As claims are, in practice, paid as soon as satisfactory proofs are received it will be seen that the company loses on the average nearly six months interest on the amount of the claim in each case. Thus by requiring full and complete statements from claimants and others the company saves time and expense to its members and their beneficiaries, it protects itself against fraud, against inefficiency or carelessness of medical examiners and agents, and it secures valuable data very necessary to the maintenance of its mortality statistics as well as other information relating to the intelligent selection of risks; all resulting in the reduction of the ultimate cost of life insurance.

The forms furnished by the life companies to claimants on which to set forth their proofs of death and claim generally cover four separate sworn statements:

1. Statement of claimant showing basis of claim and furnishing evidence that the deceased is the person insured under the policy. This statement will properly cover assignments and a statement that no bankruptcy,

proceedings have been instituted. It must satisfy the company that the claimant is really the person entitled by law to receive the proceeds of the policy.

2. Statement of physician who attended insured in last illness showing cause of and circumstances surrounding death of insured.

3. Statement of undertaker (or clergyman) certifying that the body interred was that of the person described in the claim papers.

4. Statement of a friend as to identity and circumstances of death.

Of eleven sets of papers examined, covering the proofs of claim of the better known companies, seven required all four of the above statements; two dispensed with the undertaker's statement, while two others omitted the statement of a friend. In this connection too much importance cannot be given to the function of the company's soliciting agents. Most companies warn claimants that the intervention of a third party is wholly unnecessary to the prompt payment of honest claims and no fees should be paid to anyone for alleged service in the matter. The company's agents stand ready at all times to aid legal claimants in making out their claim papers without expense. Necessarily the company relies to a great extent upon its local agent, and especially so if he wrote the policy or knew the deceased, to inform it of any suspicious circumstance which the company ought to know. The agent should take pains in every case to satisfy himself that the alleged death actually occurred and that the deceased is the person described in and insured by the policy under which claim is being made. The exceedingly small percentage of fraudulent claims indicates that an agent might negotiate payment of a thousand claims without ever finding anything suspicious and yet his very next case may be wholly fraudulent and result in serious loss if he be not vigilant to detect any irregularity. By

exercising care and obeying the company's instructions in filling out the blanks the agent will insure the prompt dispatch of the check in settlement, thereby creating a favorable impression by saving the claimant time, expense and annoyance.

That part of the claim papers which requires the greatest care has to do with the proof of the interest of the claimant under the policy. If the policy is payable to the executors or administrators, either by its terms or because no beneficiary has survived the insured, the executor or administrator must show interest by furnishing certified copies of letters testamentary or administration with such other documents of qualification as may be required by state law. Where the policy is payable to the claimant as beneficiary, proof of identity must be furnished. In all cases the legal rights of assignees or of creditors in bankruptcy must be considered. Claimants under assignments must show the amount and nature of interest under the form of assignment used subject to state laws having jurisdiction. In like manner where proceedings have been begun involving the policyholder or the claimant under the Federal Bankrupt Act of 1898, the interest of the trustee in bankruptcy under the act and any local exemptions must be considered before payment can safely be made to the claimant. If any of the beneficiaries are minors, certified copies of letters of guardianship and certificate of qualification must be furnished.

For obvious reasons many of the principles of law established by the enactments of the British Parliament and the decisions of British courts prior to the War of Independence formed the basis of jurisprudence in this country. Prior to 1774 it was a very common practice in England for speculative individuals to take out a policy of life insurance payable on the death of some person in whose life they had no other interest. These were

gambling contracts, and because they sometimes led to murders and other crimes (*Annals, Anecdotes and Legends of Life Assurance* by John Francis), Parliament, to cure the evil, passed the Gambling Act in 1774, whereby contracts to pay money on death were declared to be void if the individual to whom the money was payable had no insurable interest in the life of the person made the subject of the insurance. In due time this became by adoption the law in this country. So strong was the instinctive abhorrence of gambling in human life or any appearance of it that "insurable interest," a principle adopted to cure a specific evil, came to be popularly regarded as fundamental and necessary to a life insurance contract, and the right of an individual to pay premiums on his own policy issued for the benefit of a designated beneficiary having no interest was questioned even where no evil could possibly exist. There is, however, a vital distinction between the case of a policy procured by the beneficiary who pays the premiums and a policy taken by the insured who pays the premiums. In a recent case (*Rupp vs. Insurance Co.*) the Kentucky Court of Appeals quotes with entire approval the decision in *Hess vs. Segenfelder*, 127 Ky. 348, which says: "All the courts of last resort, with possibly one exception, and the text book writers on insurance generally, are agreed that a person may take out insurance on his own life and designate whom he pleases as the beneficiary." That is to say, a policy taken in good faith and paid for by the insured may, the court holds, be made payable to any person the insured may designate, on the same principle that recognizes the right of an adult of sound mind to give away his own property as he sees fit, regardless of insurable interest. Or, in other words, the question of insurable interest does not arise where the insured himself procures the insurance in good faith and pays the premiums.

It was formerly the practice to make policies payable sixty or ninety days after receipt of satisfactory proofs of death and claim. This delay has been generally removed and policies made payable immediately upon receipt and approval of proofs. This fact together with the insertion of incontestability provisions, the omission of the warranty and restrictions as to residence, travel and occupation, and above all the prompt payment of all honest claims, has given to the established life companies so excellent a reputation for fair dealing that one now-a-days seldom hears criticism of the business on that score. Very few believe or even profess to believe that a reputable life company will contest payment on frivolous and technical grounds. Persons of intelligence who give the matter any thought know very well that no company in good standing can afford to contest the payment of claims except in cases so unjust and contrary to the terms of the mutual agreement or policy contract that payment would be a wrong to other policyholders. A policyholder who knew of such a payment would have a legitimate right to protest.

The request of any person for blank claim papers may not be safely refused since to do so may effect a waiver of the company's right to formal proofs of claim.¹ It should, therefore, be borne in mind that formal *claim* may be made against a life insurance company on very slight grounds or by persons possessing no legal claim whatever and yet such claim will appear in the insurance reports as "resisted" until disposed of by suit or otherwise. In a recent case suit was brought for the face of an alleged policy that had never even been formally applied for, let alone issued and paid for. According to the Spectator Company Year Book and the New York Report

¹Stevenson v. Ins. Co. (Ia.) 79 N. W. 459.

McDonald v. Ins. Co. (Mo.) 55 S. W. 999.

Seely v. Ins. Co. (N. H.) 55 Atl. 425.

Grattan v. Ins. Co. 30 N. Y. 281.

the ten largest life companies (except industrials) show the following excellent record:

	Death Claims Paid Since Organization to Jan. 1, 1911.	Death Claims Paid in 1910	*Outstanding Resisted Dec. 31, 1910
1 New York Life	\$ 350,175,398	\$ 23,726,135	\$ 278,395
2 Mutual of N. Y.	442,068,300	22,887,288	536,684
3 Equitable of N. Y.	372,944,673	19,351,346	153,369
4 Northwestern	129,383,031	9,881,754	161,160
5 Mutual Benefit	142,217,369	6,437,732	49,734
6 Penn Mutual	65,472,786	5,469,366	2,000
7 Aetna Life	83,271,826	3,888,173	42,618
8 Union Central	26,825,866	2,392,407	21,189
9 Provident L. & T.	31,624,595	1,788,219	10,000
10 Connecticut Mutual	149,416,431	4,384,716	5,882
33 Company Aggregate	\$2,697,621,436	\$136,633,485	\$1,591,649

*These amounts do not represent the cases resisted in one year but the accumulation of cases not disposed of.

The above record of accumulated claims resisted, amounting to only \$1,591,649, is very conclusive evidence of good faith in the prompt payment of honest claims. It is self-evident, however, that in the transaction of a business so enormous, involving the payment of billions of dollars, there will be a percentage of fraudulent cases. The saying that truth is stranger than fiction is well illustrated by the facts in many of the cases of attempted frauds on life insurance companies. The most imaginative writer of fiction could scarcely produce anything more sensational than the records of some of these crimes. (See, for example, *Strategems and Conspiracies to Defraud Life Insurance Companies* by John B. Lewis, M. D., and C. C. Bombaugh, M. D.) The number of these cases indicates the need of watchfulness on the part of agents and medical examiners as well as the officials of life companies but the almost invariable detection of attempted

frauds shows that such watchfulness has rendered this an unprofitable field of crime. Not only must the agent, the examiner and the officers be ever vigilant to detect contemplated crime in its incipency but to eliminate proffered risks that are unsafe for any reason. Are the habits and standing of the applicant good? Is his financial condition normal? Does his income justify the amount of insurance applied for? On all these points the company must depend upon its field representatives for protection against the acceptance of unsafe risks.

With a very few unimportant exceptions it is the present practice to issue policies providing that in the event of suicide within a limited period of one year the contract will be void or the liability limited either to the premiums paid or the net reserve on the policy. This is of course a decided concession from the contracts formerly issued which did not cover the risk of suicide at any time. The strong tendency towards liberality has resulted in an endeavor to cover this risk after the passage of such a period of time as will justify the presumption that the insured did not contemplate fraud upon the company by concealing the true nature of the risk as a probable suicide. Obviously, a person contemplating suicide is not a good risk for life insurance but it is extremely improbable that any one could deliberately formulate and harbor an intention to suicide for as long as one year from the time the insurance is effected without either carrying the idea into effect before the risk is covered or regaining his mental equilibrium, in both of which cases the interests of the other policyholders have been protected. If the policy was taken out in good faith when the insured had that normal love of life upon which the company must ordinarily rely there seems no good reason why the risk that the insured may subsequently lose his self-control and take his own life should not be assumed, at least after one year. This at all events will be the view

of most persons who have at some time suffered from a nervous breakdown.

As has been shown, the proportion of claims not paid promptly and for the full amount of the policy is very small, there being very infrequent occasion for any dispute as to the happening of the event insured against, and theoretically none at all as to the amount to be paid. It is true that there are a few cases where sums less than the face of the policy are paid by way of compromise. Juries are notoriously sympathetic for the benefit of a concrete petitioner as against the rights of an intangible membership and it sometimes seems cheaper to compromise than to fight claims believed to be dishonest or not legal. These cases merely illustrate the difference between actual practice and the theory that the policy is a contract to pay a sum of money, which sum is either due or it is not due.¹

Until comparatively recent years life insurance companies did not concern themselves greatly with the fate of cash paid to the beneficiaries of deceased policyholders. The insured paid his premiums and the company closed the transaction by paying the insurance in one lump sum to the beneficiary. The notion of higher efficiency as viewed in retrospect is of amazingly slow growth. However, the fact that a considerable part of the protective funds created by the loving foresight and self-denial of policyholders was being lost by unwise investment and swindles did at last force itself upon the minds of insurance executives. It is impossible to offer even a guess at the amount of death claims paid that failed to benefit the persons for whom intended, but after a recent investigation by the Post Office Department of a limited number of cases of illegal use of the mails by fraudulent invest-

¹A life insurance policy is not a contract of indemnity. It is a contract to pay a sum of money upon the death of the insured in consideration of certain payments being duly made at fixed periods during his life.—*Reed v. Prov. Savings* 190 N. Y. 111.

ment concerns the postmaster general said that "the swindling operations of these seventy-eight cases have filched from the American people in a period of five years more than \$100,000,000." It is needless to say that widows with insurance money were easy victims for these sharpers. In order to meet this danger, to protect the fruits of prudence and prevent their diversion, to complete the service rendered by this institution of the people, the plan was adopted of paying life insurance money in the form of annual, semi-annual or monthly instalments or an annuity of some kind.

The policies now issued by the leading American companies provide for several optional forms of income in lieu of payment in one sum, as follows:

(a) The principal sum may be left with the company until withdrawn, the company in the meantime to pay a guaranteed annuity equal to 3 per cent. or $3\frac{1}{2}$ per cent. of such principal annually, together with such surplus as may be apportioned. Of twenty-six well known companies, seventeen offer this privilege to beneficiaries.

(b) The principal sum may be paid in the form of periodic instalments based on 3 per cent. or $3\frac{1}{2}$ per cent. interest, covering from two up to even fifty years. Of twenty-six leading companies every one offers this form of settlement.

(c) The principal sum may be taken in the form of periodic instalments for a stipulated number of years, with the further provision that if the beneficiary survive to receive the stipulated number, similar payments will be continued for so long as she may thereafter survive to receive them. Of twenty-six leading companies all but two offer this feature.

There are various other forms in which the principal sum due may be taken by the beneficiaries but the three above mentioned received special prominence by being

incorporated in the standard policy forms adopted by the New York Legislature in 1906 but abandoned in 1909 for an amended section providing for standard policy provisions. These forms or options of settlement are usually so constructed that the insured may place the settlement selected beyond the control of the beneficiary in order that his plans may not be defeated. Thus the beneficiary may be forced to take the benefit in that form of periodic payment chosen for her and is protected against her own lack of experience or prudence as well as the advice of unwise friends or the designs of unscrupulous financial harpies.

Life insurance is the answer that society has worked out to the absorbing problem of family dependence. Its chief function is to protect the family not alone by merely paying the sum contracted for but by paying it in such a way that the purpose of the insurance will be fulfilled to the highest possible degree and beneficiaries made as comfortable as the amount of the insurance will permit. Hence the development of life insurance has led to a gradual enlargement of the field in which the risk is fully covered until the policy is payable, except for suicide, fraud and material misrepresentation during the first policy year. Hence also the immediate payment of the loss and for the convenience and protection of the beneficiary its payment in annual, semi-annual, quarterly or even monthly instalments. In these ways life insurance has met the needs of its people to the end that no home may be without the full measure of independence that its bread-winner is able to earn.

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CHAPTER XX

HOME OFFICE MANAGEMENT

BY JOEL L. ENGLISH

AFTER organization of the life insurance company has been completed in accordance with the law of the state where organized it is prepared for active business, and real difficulties are then encountered, because men do not voluntarily go into a life insurance office for the purpose of insuring their lives. Perhaps no other class of business depends so much upon active personal solicitation. Men do not make up their minds to insure until they have been drawn to that conclusion by a skillful and well-informed agent, and there is comparatively little work to be done in the home office until applications for insurance are secured.

Agency Department

For these reasons the *Agency Department* of a company is the first and most important branch of the home office. To properly equip this department needs at least one officer who shall devote himself to this enterprise, secure agents and managers, give them the necessary instruction, and designate the field in which they are to operate, as well as to supervise the records of the home office pertaining to agents and agency work. In order to secure a wide selection of risks, so as not to expose the business of the company to sudden variations of mortality occasioned by local epidemics, it is usually thought best to write business over a large territory covering a considerable number of states. From such states due authority must be obtained, both for the company and the agents individually, because the laws of nearly every

state prohibit business being transacted therein by companies or agents without a license.

Medical Department

As soon as the agencies have been established and supplied with the necessary instructions and forms, all applications for insurance are forwarded to the home office with the expectation that if found acceptable policies will be issued. The acceptability of an application depends mainly upon the judgment of the medical director of the company. Most companies have an organized medical department conducted at the home office by the medical director with the necessary assistants, and in the field by local medical examiners. Such examiners are appointed by the medical director for those places where examiners are likely to be required, and the fee which will be paid for each examination is established. Recommendation of a risk by an examiner does not always warrant the issue of a policy, but the examiner's certificate, together with the facts derived from the application, and sometimes from other sources, are considered by the medical director, who generally approves but sometimes disapproves the risk. Before the application is finally accepted it is carefully examined with reference to features of insurability that are not strictly speaking of a medical character. There is the question of habits of the applicant concerning the use of stimulants, for which more applications are rejected than for any other reason. Questions of residence and occupation also cut a large figure in the consideration of applications, because while the policies of most companies permit the insured to travel or reside anywhere, or engage in any occupation after the policy is once issued, some of them will not insure a person now residing or traveling in certain climates believed to be unhealthy, nor insure a person engaged in some dangerous occupation, and the person

who is now incurring such hazard or who contemplates doing so will be rejected if the facts are disclosed. The application is also inspected to see if all the questions are properly answered so as to give the information which the question is designed to elicit. Closely connected with the criticism of applications for insurance is the file of information received from other companies regarding impaired risks. This file is carefully inspected to learn whether the applicant has been considered unfavorably by some other company for reasons which are not disclosed in the application under consideration. The agents have become so well informed of the wishes of the company respecting applicants that in the large majority of cases the applicants are found acceptable and the policies are written and forwarded to the agent for delivery.

Inasmuch as the statements made in the application form a part of the insurance policy, many of the states require that a copy of the application shall accompany the policy in order that the insured may have a copy of the entire contract of insurance. The policies are, generally speaking, all written at the home office after the applications, as above explained, have been approved by the medical department. It might seem at first that this is a comparatively simple process after the name and address of the insured and of the beneficiary have been properly designated, but as a matter of fact the supervision of this work involves a long experience and some knowledge of the settlement of claims, because the beneficiary must be so expressed that when the policy becomes a claim it may not bring into the settlement unnecessary difficulties and disputes. The writer of the policy, or the man who directs just how the beneficiary shall be written, must know something of what constitutes a proper insurable interest in order that the policy may be so written that it will not fail to meet the intentions of

the applicant. In this connection also it is sometimes in the interest of the company to refuse to write a policy for certain beneficiaries whose interests may be speculative, or where the beneficiary would not suffer a loss by the death of the insured. The relationship or description of the proposed beneficiary in some cases furnishes an indication of the quality of the risk, but aside from possible objections of this character, a policy should not be written which will fail to carry out what appears to have been the intent of the applicant, or where the intent of the applicant is obscure. In such cases correspondence with the agent or applicant may be necessary to determine how the policy shall be written.

The Records

The policy having been issued, a record of the same must be made at the home office for permanent office purposes. These records were formerly made upon books, but now a large part of them are made upon cards, filed either in numerical or alphabetical order, and, perhaps, also by states or agencies, as the needs of the company may require. In some cases a card record of policies is so made as to furnish the basis from which the notices of renewal premiums are sent out shortly before the premium falls due. Policy records are needed for general office information, and especially by the actuarial department, by the bookkeeping department, and by what is known as the renewal department, which does the home office work necessary for the renewal of policies. This is usually attended to annually, semi-annually or quarterly, according to the provisions of the policy. The records for these purposes and the methods of conducting the work differ with different companies, but they are bounded by the same general requirements and seek to attain the same end.

The Bookkeeping Department

Aside from what is commonly known as the records of the company is the matter of bookkeeping—perhaps the most essential of all the office work, since upon this must depend all knowledge of the progress of the company, and the profitableness or unprofitableness of the business from year to year. It includes all the cash transactions and accounts pertaining to investments of all kinds, as well as the insurance accounts, and the thousand and one items necessary for the complete history of the company's business and for compliance with the requirements of the many state insurance departments. In a large business the bookkeeping, unless practically and scientifically worked out and conducted, is apt to result in serious complications, and unless the system adopted affords opportunity for frequent balancing or proving the correctness of the work, it will soon run into confusion and fail to give a correct report of the business transacted, and of the financial standing of the company.

Actuarial Department

Before policies of life insurance can be actually written, and even before applications therefor can be secured, premium rates and surrender values must have been carefully and scientifically prepared by the actuary of the company. His work is really the forerunner of all the business to be conducted, and he must be well informed not only in the mathematical part of his profession, but must have considerable practical knowledge of life insurance before it will be safe to follow his advice. The cash surrender value which is now required for most policies, as well as the amount of paid-up policy which is guaranteed to be issued in event of a lapse, must comply not only with the requirements of the law but with the ability of the company, and after this preliminary work has been satisfactorily done there follows more or less

work of an actuarial character in devising suitable plans of insurance, and preparing policies that will correctly express those plans and which will fill the requirements of the state laws, and, as far as possible, the needs of the agent in competition.

Publicity Department

The preparation of these plans and rates for publication, and the correct and forcible presentation of them in print belong to what might be called the department of publicity, and in an important company this involves a large number of publications, and a fairly accurate knowledge of the life insurance business. Frequent letters of instructions to agents, and, perhaps, to policyholders and others are necessary, calling for a large amount of printing. Most of the large companies have printing offices of their own, where much of their printing is done by way of better accommodating their business than could be done in a printing office doing general work. Printing most needed can be done immediately while other work is laid aside, and this could not be brought about in a public printing house because of the impossibility of laying aside the work of one party for the accommodation of another.

Department of Policy Forms

The preparation of policy forms that shall correctly express the various plans of insurance is a work of no mean importance, especially in later years since policies are required to be submitted to the insurance departments of various states and approved by them before they are allowed to be issued. The views of the authorities of various states sometimes differ, and it is desirable for the policies to harmonize with the views of all the departments as far as possible in order that it may not be necessary to issue several editions of policies for

the same kind of insurance. As the policies are important contracts, oftentimes involving large sums of money, and are to continue in force for generations, it is necessary that they shall be prepared with great care, and be free from ambiguity, as well as attractive in general appearance.

Policy Changes Department

A department of the home office work which has reached a position of very considerable importance is that which attends to the various changes of beneficiaries which are required by the policyholders from time to time. These cannot always be made as desired for the reason that the proposed change might be illegal or invalid or involve dangers, complications or uncertainties as to whom the claim under the policy shall be paid. Other changes of policies are also called for, especially during their early history—changes involving different premiums, and kinds of insurance, and possibly different amounts, all of which have to be carefully adjusted between the old policy and the new, and which in some cases are a sort of mathematical puzzle and demand considerable time and care in the solution of the problem which they present.

Department of Assignments

Another branch of the home office work, also of great importance, is that of assignments, which in a large company are being continually received and have to be duly acknowledged and filed, and in many cases it seems necessary to call the attention of the correspondents to what appear to be inaccuracies or illegalities in the assignments, or to some other feature which may result in the assignment that has been executed failing to carry out the evident purpose of the assignor. Even lawyers, considering their comparative unfamiliarity with the life

insurance business in its practical shape, do not always provide proper forms of assignment for their clients; and, while companies rarely if ever guarantee the correctness of assignments that are executed by their insured—since they are contracts to which the company is not a party—at the same time it is natural that companies should wish to protect their policyholders as far as possible by advice or suggestions. This is a department also that requires experience and more or less legal knowledge, and oftentimes also a large degree of patience in order to meet objections or prejudices.

The same is true in the settlement of death claims and maturing endowments. It not infrequently happens that while the policy appears to be payable to one party, some other party may claim the sum insured, or a portion of it, and their claim is denied by the payee of the policy. This change of title most often happens by reason of an assignment, and the very purport of the assignment may not have been appreciated by the assignors, or at any rate by the claimants, and consequently a dispute arises as to the ownership of the policy when it becomes due. Much experience with this part of the work and some legal knowledge of such contracts is necessary to conduct such settlements successfully in order to avoid expense for both the company and the claimants. The records of these departments have also to be made with due appreciation of all that is needed to answer the various questions propounded in connection with them in the annual statements of the company to the state insurance departments, as well as for the proper record of the company's business for its own purposes.

Policy Loan Department

The laws of various states require life insurance companies to loan on most of their policies. Such loans have become very numerous, involving, in the aggregate, a

large amount, so that the policy loan department requires intelligent effort in order that loans may not be made without first securing the proper papers from the owners of the policy. These papers evidence the loan as a lien upon the policy; because when the policy becomes a claim all loans and interest thereon, if any are due and unpaid, are deducted from the amount otherwise payable by the company. If a policy on which a loan has been made lapses, the surrender value is naturally affected by the lapse, and the amount of paid-up policy which can be issued, or the amount which can be extended as paid-up term insurance, or the time for which such extension can be granted, are all affected according to the amount of the loan, and the proper record of the policy's condition must be made upon the cards or registers of the company.

Treasurer's Department

Financially speaking, and as regards the cost of the insurance to each policyholder, the treasurer's department, or the department of investments, is of vital importance, not only to the growth and popularity of the company but to its actual safety as a financial institution. Investments may be made at a comparatively low rate of interest by the purchase of first-class bonds without great talent and without much labor and expense, because there is a large class of securities of this nature well-known to all persons who are in any way connected with financial matters. On the other hand the investment of money so that it will be practically as safe and yet will bear a rate of interest from one-half to one per cent. higher than the bonds described is a work requiring experience and skill and a wide knowledge of the class of securities in which such investments are made, and also requires much more labor than investments which are made solely in bonds. The laws of many states limit the kinds of securities in which the funds of life insurance companies may be in-

vested, but the bonds above described and mortgages upon real estate seem to have been preferred by the state insurance authorities as well as by the companies themselves, and, consequently, most of the funds of life insurance companies are invested in both of these classes of securities. The bonds and the papers, showing the mortgages and titles of real estate which are given to secure such loans are kept in the safest vaults that can be built. Investments in real estate mortgages must be made by men who are familiar with values, and also with the character of the persons to whom the loans are made, but, of course, the property itself must be the final security for the money which is loaned. Great care is exercised in the examination of the mortgages, and the abstracts of title. Formal statements of the company made at the end of each year give a correct description of each class of bonds owned, and these securities are at all times open to the inspection of the insurance commissioner of any state or his authorized representative.

Policy Dividends

In a mutual or participating company the policyholder is entitled to share in the surplus earnings, and the records of the company must be so kept as to show the exact amount to which each policyholder is entitled from the earnings of the previous year, since the laws of various states now require dividends of such surplus to be made annually. The division and payment of this surplus, either applied to the reduction of the succeeding year's premium, or paid in cash, or perhaps applied to the purchase of paid-up insurance, require an infinite amount of detail work, and the employment of a large number of clerks, if the company is of considerable size, and this adds materially to the expense of conducting the business. The apportionment of the surplus to which each class of policies is entitled, and the amount

due each policyholder, is made in the actuarial department, and involves a recognition of the gains made,—from interest on investments which usually are more than the amount assumed in the calculation of premiums, from the death rate having been less than assumed and also from the expenses having been less than provided in the premiums paid, if such is the case. In a well organized and conducted mutual business there are almost always some gains, however small, from each of these sources. The calculation of these gains and their equitable apportionment require the highest degree of skill and experience on the part of the actuarial force, and no small amount of labor. The unit of insurance is practically regarded as \$1,000, and the amount of dividend to which a policy of \$1,000 in each of a large number of classes of insurance is entitled, having been ascertained and reported by the actuary, it then devolves upon the clerks to determine therefrom the amount to which each policyholder is entitled, according to the kind and amount of policy which he holds, and the number of years it has been in force, and to make a statement of the same to send to him at the end of each insurance year.

Upon the actuarial department also depends the valuation of the policies at least once a year—usually as of December 31st. This valuation shows the amount of funds which the company must have in hand to meet all classes of claims as they become payable, and this calculation is made upon the assumption of a certain rate of expected mortality, and a rate of interest which it is assumed the investments of the company will earn. The value of the company's liability under each policy depends upon the age of the life when insured, the amount of the insurance, the kind of policy, and the length of time since it was issued. A vast number of multiplications enter into these calculations, most of which are now performed on calculating machines.

The premiums on life insurance policies are usually collected through the agents located in different parts of the country, who are required to report and pay the same periodically to the home office. From these premiums are paid the expenses of the agencies, the agents' commissions, postage, possibly some clerk hire and rent—depending upon the kind of contract which has been made with the agent—and any other expense to which the company is subject in the conduct of the agency. The accounts of the agency as rendered to the company are usually made on forms prescribed and furnished by the company, and when received at the home office are subjected to careful scrutiny or auditing by those appointed for the purpose, to make sure that the right amount of premium is paid on each policy, that the proper amount of commissions is charged and that the account is correct in all respects. Errors which may have been detected are corrected by correspondence with the agents, the proper entries are made by the bookkeepers, the net amount of cash is turned over to the cashier, and the account filed away for future reference.

In addition to the correspondence pertaining to each department or class of business, and which in a large company is conducted by the head of such department with his assistants, there is a large amount of general correspondence which must be conducted or at least supervised by the officers. This general correspondence covers all features of the company's business. Even the smallest matters, becoming complicated with others, may require special consideration and treatment outside of the regular conduct of the business. It is interesting and oftentimes surprising to note the problems which arise from various sources—principally with the agents and policyholders, and which sometimes require much time and ingenuity for their proper solution, though they may involve comparatively small amounts. The regular

mass of the business—the treatment of applications for insurance, the issue of policies, the collection and report of premiums, the settlement of death claims, matured endowments, surrender values, etc.—goes on without friction or trouble. It is the unusual and unexpected which consume a large part of the time of the official force. These relate to disputed items of account, to claims for the same amount due under policies by different parties, and to the disputed construction of assignments or policies; and more or less correspondence is always on hand with agents regarding their agency contracts with the company, and also regarding the policies or contracts of insurance which may have been imperfectly understood by them or by the policyholders. Correspondence of agents with the actuarial department regarding premium rates, surrender values, and a score of other things involving the mathematics of life insurance is also quite extensive.

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CHAPTER XXI

AGENCY MANAGEMENT

BY EDWARD A. WOODS

ATTEMPTS have been made to sell life insurance without an agency organization—"over the counter"—notably in England; by occasional American companies who have endeavored, through advertising and circulars, to do what might be called a "mail order business," and in Massachusetts by permitting savings banks to sell life insurance. The almost negligible amount of business done through these methods and the expense, direct or indirect, at which it has been secured, show these experiments to be practical failures. Branch offices at important centers are at least as necessary in life insurance as in other large business ventures. In addition to the meager business thus secured, resulting ultimately in a high expense and death ratio, the inconvenience to policyholders of being obliged to transact the important and sometimes complicated matters involved in the history of a life insurance contract by mail is very unsatisfactory. Every life insurance company, therefore, has an important executive officer in charge of its agencies or what might be termed its "Sales Department," for, as with any other good article, even the best life insurance will not sell itself. This is peculiarly true where it is but natural to procrastinate about a provision that needs must be made when one is in good health and does not need it, and that can be most advantageously made when young and the contingency provided against probably, and at least apparently, very remote.

The agency officer in a small company may directly appoint and supervise the general agents in charge of the branch offices. If the company is sufficiently large, the

territory may be sub-divided and subordinate officers, either located at the home office or traveling, direct the operations of large territories. In the case of some companies doing a large foreign business executive officers are located in foreign countries. This organization is highly specialized among industrial companies, where grand divisions and sub-divisions of territory and force are required, often numbers of offices in the same city being necessary.

Two different agency systems exist: the direct agency system, under which the local office is in charge of a salaried man representing the company and dealing with agents as they would be dealt with by the home office; and the general agency system, under which the general agent is paid a commission and is expected to make terms with his agents and to expend his own funds, supplemented by what allowances the company can make, in developing his agency, he securing the marginal profit. The great industrial companies, together with two of the leading New York companies, pursue the former method; almost all other companies the latter.

We shall consider here the general agency system, as distinguished from the direct agency system.

General agencies controlling certain territories are of two classes:

FIRST.—Where the general agent expects to make his principal profit upon his personal business; that from agents being regarded as merely incidental. Such a general agent will make his personal business his chief object. He will himself make all possible use of leads secured from old policyholders, from policies maturing by death or otherwise, from inquiries, from circulars and advertisements and from every possible source, selecting first those that he can handle himself. He may secure agents but will not allow them to take too much of his time from his personal business, from which he will se-

cure his main profit. Such a general agent may accept surplus and other lines of business that may be placed through him by agents of other companies. Obviously, such an agency, while profitable to the general agent, is not so desirable for the sub-agent; yet such a general agency is profitable and independent, free from the responsibilities of a large organization, and numbers have made comfortable fortunes from the commissions and renewals of just such agencies.

SECOND.—A large general agency, where the policy of the management is to make it profitable and attractive for sub-agents and where the principal profit is expected ultimately to come from the marginal commissions and renewals of a large number of sub-agents. In such an agency it should be the policy of the general agent to subordinate his own interest and that of the office to his agents; to have them feel that their interests are preferred, that they will be given first opportunity to profit by leads of all kinds secured by the office; in all cases of conflict of interest to give all reasonable preference to sub-agents. Some agencies further protect them by refusing business from all outsiders or by declining to pay, or permitting their agents to pay, so-called “helpers or handshakers” or any outsiders any part of their commissions in any way, causing it to be understood that the interests of its agents are first in the agency. Such an agency will be built up slowly, because obviously the small marginal commission upon first, if any, and renewal, premiums will be slow in aggregating any considerable amount; but it should ultimately exceed what will be possible for the first form of general agency. When thoroughly established the latter will not be so dependent upon the personal effort of the general agent and will gradually attract more and more successful agents to its standard.

It should be the constant, daily endeavor of a general agent to do four things:

FIRST. To develop and increase the efficiency of his old agents.

SECOND. To be constantly upon the lookout for new agents.

THIRD. To discharge inefficient or worthless agents.

FOURTH. To get some personal business.

If a general agent does not inherit from a predecessor an agency force, it must be built up; and this is possible only after patient and long effort.

The wrong way to go about it is to neglect personal business and devote all one's attention to getting agents. This method is unsuccessful, as well as most expensive, because the profit from agents is both small and long deferred until a large agency has been built up. The proper and quickest method to pursue is to vigorously push personal business, with a view constantly to securing assistants, perhaps at first those who will be more especially helpers of such general agent in his own personal business than those from whom a considerable direct business can be secured. Such helpers, perhaps, will not be willing, at the outset, to abandon their former business or profession, from which they are, perhaps, receiving regular salaries, and embark in a commission business; but after demonstrating talent for life insurance, they will more readily and safely decide to give it their entire attention. Such helpers can be most readily secured among such classes of persons as fire insurance and real estate men, cashiers or other persons associated with banks in small towns, teachers and others having several months of the year and sometimes portions of the day or week to give to other things and needing additional income.

The persons who compose the office force should be selected with a view to training them in the office, urging

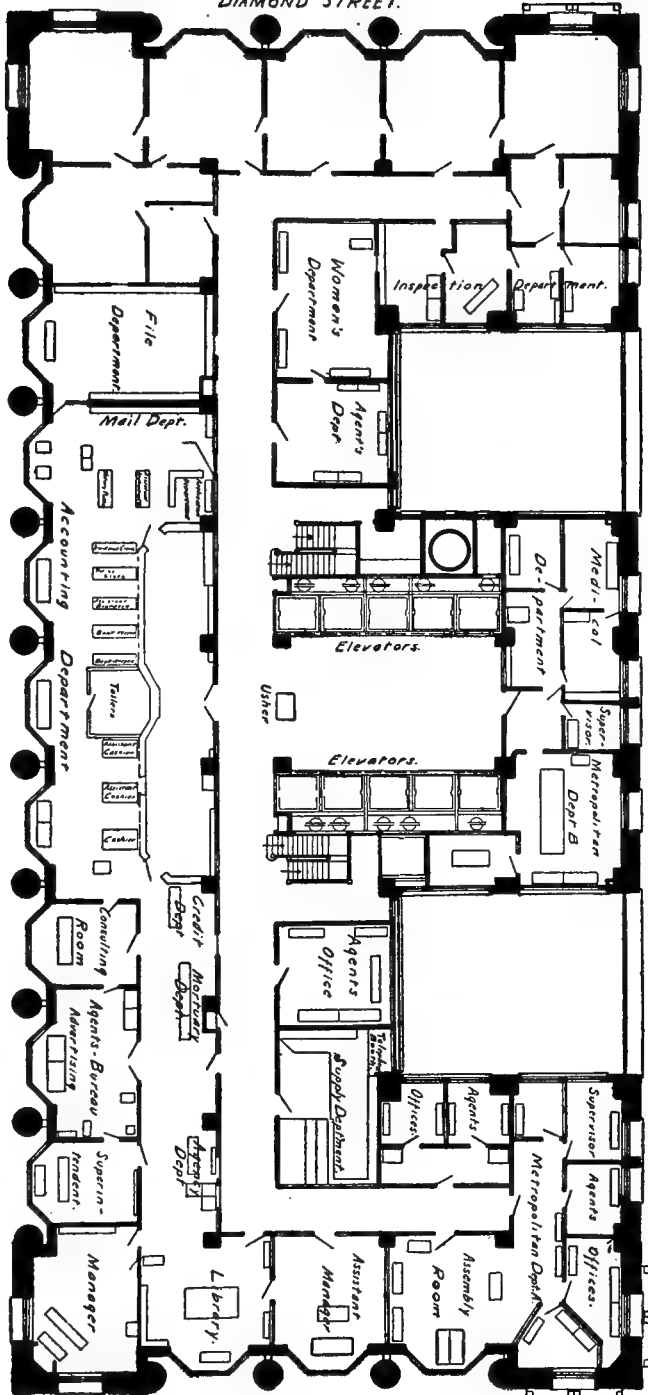
them while there to become interested in and write all the personal business they can, and keeping before them the opportunity of ultimately breaking away from office work, where advancement is slow and the future outlook comparatively small, and getting into the agency field, which is not only the most profitable but where their income depends more directly upon their own efforts. In many agencies a large percentage of the business is written by the office force, who should be liberally encouraged to do this and from whose numbers future agents and supervisors should be developed.

Numbers of other classes will readily suggest themselves, needing to employ more of their time, and who will at the outset work with the general agent, assisting him in securing business for a share of the commission and gradually developing a talent in doing this by themselves and adopting the business exclusively.

But the permanent members of the agency, who will make its greatest success, are those young men who enter the business willing, as in other professions and even in special lines of business, to go slowly and patiently during their first years, endeavoring more to thoroughly equip themselves for the future than to make money immediately; who will realize that their chief gain in early years is not measured by the actual income received but by the training, experience and development acquired; who have no families requiring immediate and comparatively large returns for support; who, as with the young professional man, or even young business man, are determined and able to learn the business thoroughly before the later obligations in life occur. The tendency in the business is more and more to rely upon such young men as the nucleus of a successful agency.

Several principles can be laid down as fundamental in building up an agency:

DIAMOND STREET.



FIFTH AVENUE

GRANT STREET
THE EDWARD A WOODS AGENCY OF THE EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES.
SECOND FLOOR PLAN
FIRST BUILDING
FLOOR PLAN OF AGENCY

Those unsuccessful elsewhere never succeed in life insurance.

This does not mean that those having met with financial reverses, destroying their capital, which they are unable to resecure, might not make and often do make the very best representatives of life insurance companies; but of the large numbers of persons willing to enter the business provided they be given a guarantee, a salary or an advance, so few ever have succeeded that the only safe rule is to avoid unsuccessful persons. Many general agents have spent fortunes and years in learning this obvious elementary fact; but it is reasonable to assume that one in an impecunious state is little likely to succeed here when he has succeeded nowhere else.

The giving of advances, guarantees or salaries is not only ruinous to the agency but a mistake for the agent himself.

It does not secure successful men. Further, in giving them, there will certainly be some losses, and these must come either from the profits of the general agent, or of the agents who do succeed; or the general agent will fail. The compensation paid to sub-agents is so large a proportion of the general agent's commission that there is little margin for waste; and notwithstanding the temptation to secure some of the thousands of apparently smart people willing to try life insurance *at the general agent's expense*, the profitable and safe way to build up an agency is to discard all such applicants and to concentrate effort on those willing to assume themselves the chances of success. It is better policy to pay the maximum commission consistent with the proper development of the agency to successful men than to reduce this to make up the losses that will certainly come from advances, guarantees or salaries—losses which will always come from the unsuccessful, thereby taxing the per-

manent and prosperous members of the agency to pay for the failures.

The successful experience of hundreds of agencies shows that men can be secured who will finance themselves as they do in the other professions until the business becomes profitable, especially as profits can be expected much earlier in insurance than in medicine, law, engineering, teaching, the ministry, etc., where years of expenditure for training must precede any income whatever. Guaranteeing or lending agents money to induce them to come into the life insurance business is in the long run a mistaken kindness, and it does not secure a class of men willing to succeed and confident in their ability to do so.

It is unwise for the general agent to pay such a large commission that he will be unable to use funds for the general building up of his agency. While there are niggardly general agents—who will, of course, never build up large and successful agencies—many have failed because of paying commissions they could not afford, and at the same time give facilities for training and developing their agents. The general agent practically acts as a disbursing agent for his force, spending for advertising, for traveling among and visiting his agents, either himself or by paid supervisors, keeping them informed by circulars or otherwise of methods of canvassing, perhaps furnishing them with prospects, and efficiently and in numerous ways expending funds that can be much more economically and efficiently expended by the general agent for the agency as a whole, and would not be possible by the agents individually. If this expenditure is properly made, it will pay the agents better to have a somewhat less commission and have this margin so used by the general agent than to receive the maximum commission, with little or no assistance, and be expected to learn and do all the rest themselves.

It is unwise to over-encourage prospective agents. Paint the difficulties of the business strongly and the patience and time required to succeed. Irrespective of common honesty, it pays better to weed out weaklings by frankly putting difficulties before them. They will be found out quickly enough in actual experience. Moreover, agents, as well as policyholders, will be better satisfied with moderate expectations exceeded than extravagant expectations unrealized. If a man expects \$1,000 the first year and makes \$1,100, he will be pleased; if the same man expects \$1,500 and only makes \$1,100, he will be dissatisfied and discouraged. Some successful general agents purposely paint a dark picture of the difficulties of the business and the small chances of success to the average man, to eliminate weaklings at the start instead of spending weeks of effort upon them that might better be concentrated upon good material.

It is unwise to employ or to hesitate about at once discharging dishonest, unscrupulous, dissipated, extravagant, impecunious or unsuccessful agents. It is hard enough to make money from honest, successful men; it is impossible from dishonest or unsuccessful men, even if one likes the job. Long experience has demonstrated that nine-tenths of the agents who once embezzle money repeat the offence; and the profession of protecting homes and providing for old age can hardly be properly represented by dishonest, immoral or dissipated men or women. As soon as an agent has been given a thorough trial and has shown that he has not the desire, ability or character to succeed, for his own interest as well as that of the agency he should be at once dropped and attention concentrated upon men who want to and can succeed. The best advertisement for an agency is its successful men; the worst is its dishonest, immoral or unsuccessful men.

It is generally unwise to assume too large a territory. Covering a large district is expensive as to time and

money, whereas a small district can be worked thoroughly and economically much more quickly and profitably, and such a general agent will have no difficulty in having his territory later extended. Many general agents make the mistake of acquiring as large a territory as they can get, "spreading out thin," involving a large expense if properly worked and if not so worked, falling short of the company's expectations and ending in discouragement and failure, when starting with a small, compact territory as a center they might have gradually developed a large and profitable general agency.

Some men would rather have a title as general agent or general manager for an insignificant company in a poor territory than be a successful soliciting agent in a good territory for a good company. Success in a general agency is only attained by hard, persistent, intelligent, well-planned work—never by titles, offices or advertising.

The general agent should make himself valuable to sub-agents, who should thereby be convinced of the value of his training. Working with such agents without dividing commissions is generally a mistake, because the general agent cannot afford it and because it does not develop independent ability on the part of the agent, and because the valuable training and instruction that can be given by the general agent are not appreciated if given for nothing. Agents who will expect the general agent to close their difficult or important cases, or who are not willing and glad to do joint work with the general agent or supervisor, are of little value, and the ultimate success of the agency will depend upon the development of agents who can do business by themselves. It is unwise to waste time upon agents who either really do not want to learn the business or are too selfish to give a share of the commission to the general agent who can give them training, and in neither case can they be made to succeed.

It is always wise to impress upon agents the fact that the advantage of their connection lies in the value of the training that will be given and not in the size of the commission. One of the advantages of the insurance business is that successful salesmen are always in demand, never need seek employment, and as fast as capacity is developed in this respect will receive offers from other companies. This should be anticipated and guarded against in advance by frankly telling agents that success in life insurance does not depend upon the percentage of commission paid but upon ability and opportunity to secure business and therefore upon the amount of business secured. Connection with a particular company and agency is profitable because of the training given and the advantages offered. Holding the best men by means of the largest commission is neither effective nor possible; indeed, it is the poorest companies who pay the largest rate of commissions and therefore a paradox that the agents who receive the largest rate of commissions make the least money. It is much wiser for the general agent to make such contracts as will justify him in extending the greatest possible help to his agents and leave him a fair profit than hope to hold them by excessive commissions, leaving him no margin to furnish any aids that will help secure business.

Some general agents make a definite effort to secure a representative in each town in their territory by devoting themselves largely to securing as much business as they can personally from each particular town, attracting the attention of alert men by their own success. If every few years a few permanent agents can thus be secured, success will be cumulative, as these will in turn attract others, until the entire territory is covered.

Most successful agencies become profitable only after many years; the general agent's income in the meantime being largely from his personal business. Gradually an

agency force is secured and built up ; the small margin of profit is ultimately a very great source of certain revenue, and, as elsewhere, success begets success and the reputation of the agency for securing and maintaining efficient representatives attracts others. He will be in constant demand for joint work with his agents upon cases, developed by the sub-agents and closed by the general agent upon a division of commissions.

The general agent should decide early whether personal business will not be more profitable to him than running a general agency. Almost every company has in its employ those who make more, by entirely personal commissions and renewals, than most general agents and sometimes even than any officer of the company. The position of personal solicitor is independent, the returns are quicker and for some men larger than those received from a general agency, with the delay and responsibility incurred in building it up. Therefore, the general agent will do well to decide early whether, after all, he would not prefer to be a personal writer ; and if so, not to be deterred by any feeling of pride in having the title of general agent from doing that which will be most profitable for him and for which he has the most talent.

Experience has shown that it generally does not pay to take back agents who have once left an agency. It is better to concentrate effort on its permanent members than to encourage the rolling stones who leave expecting to return if they do not make good elsewhere. Few who leave a successful agency ever either succeed elsewhere or return with even as much probability of success as when they left, and the knowledge that leaving the agency is final will cause its best men to hesitate long about taking an irrevocable step. The greatest damage to the agent willing to constantly consider new propositions is the distraction of his time from soliciting every time an attractive offer is made to him, and any successful sales-

man can keep himself constantly busy considering other offers, if it is known that they will be received.

Agents should not be looked for from other companies. This is often the first source for getting agents considered, and it is the last place from which to get good men. Men and women introduced to the business by the successful general agent, trained according to his ideas and methods, not induced to leave one company by greater expectations from another, are the ones upon whom dependence can be made for permanent success, and it is well for the general agent to make up his own mind and have it known among his agents that preference will be given to the permanent members of his agency rather than its transient members.

In some agencies the general agent takes direct charge of the collection of premiums and employs the necessary clerks for this purpose. Under a different system the collection of premiums and the accounting of the agency is under a cashier, employed by, and answerable directly to the company but of course acting under the direction of the general agent when not in conflict with his duties to the company. The latter is considered by many to be the most advantageous system to the general agent, who is not thereby burdened with collections and bookkeeping. Considering the right to collect premiums oneself instead of through an accounting officer or force employed by the company as an advantage is generally a great mistake. It is much better to dispense with all this responsibility and anxiety and, if the agency is not sufficiently large to justify the employment of a cashier, to have collections made through a local bank, not only furnishing relief from responsibility but permitting its entire time to be given to the profitable and important matter of getting business and agents. Generally the best solicitors and general agents have not the desire and often not the capacity to attend to the details of accounting. A general

agent properly managing his business will get all the advantage of collections in his territory that he can properly be entitled to, whether they are collected through a cashier in charge of that department in his office or through banks throughout the territory and escape the burden of them. In starting a new agency the general agent cannot afford to remain in the office to receive collections; and if he does not do this, a clerk or clerical force must be employed to do so. This money, whether paid by himself or the company, can generally be more advantageously used in some other way. Of course a general agent should keep constantly in touch with his policyholders, and when premiums are not paid, whether he himself has written the business or not, should try to keep the policies in force, thereby attaching himself to his clientage and accustoming them to regard the general agent as looking after their interests. Further, lapsed policies of a general agent's company, whether written by himself or not, are a source of disaffection he cannot afford to have exist.

Some general agencies, when highly organized, maintain departments for securing and furnishing prospects to their agents, which are more cheaply secured in this way than by the individual agent and supplement the cases the agent himself secures through his individual acquaintance. Such prospects can easily be secured at small expense by the general agency, either from old policies about to mature, having dividend additions, or upon those who can carry much heavier insurance, or from various other sources, as, for example, commercial agencies, through lists of trades; and when properly selected and given to the agent, with information suggesting why they should be insured, will be valuable to him in giving him leads upon which to work, and keep him busy, for wasting about two-thirds of the agent's time is characteristic of most life insurance salesmen. Some

agencies also require from agents just starting daily reports of their work, the general agent or supervisors under him going over their prospects, suggesting methods and giving the advice that experienced men can. Reinforced by this the agents can approach the prospects with much greater chances of success and become thereby thoroughly educated and trained in the business much more quickly than by finding out during long experience their own mistakes. It should be the purpose of the general agent in every possible way to give the agent the quickest possible start, and he should, particularly during the early months, carefully scrutinize and criticize the agent's business and method of procuring it, and be quick to dispense with agents who show by not being willing to receive or profit by criticism that they do not wish to succeed.

The future large, successful agency will be further specialized in that its most experienced and expert closers will be more economically employed in giving their time to closing cases jointly with agents who are better able to bring in prospects than to close them. Joint work will be increasingly the rule, as it is in important cases in medicine and law, and it will be the business of the younger and less experienced agents more to hunt up persons interested in or needing life insurance and, by utilizing the skill of the expert closer, acquire commissions more economically and efficiently, just as the able lawyer or physician employs assistants to prepare cases or make the early examinations of patients. Some large agencies have bureaus, referred to above, which supply prospects, giving the agent sufficient data and information as to persons requiring insurance, able to get and pay for it, and the reasons to be presented why it should be secured. These prospects, while, of course, they supplement the agent's own natural clientage, can be much more cheaply secured by a bureau established for this

purpose than by the agent, whose time is more valuable when employed in the work of developing cases.

Such an agency will further have specialists in various kinds of insurance, to whom all such cases will be brought and worked as joint business. It will, for example, probably have one or more agents who make a specialty of:

Income Insurance.

Corporation or Partnership Insurance.

Insurance to Protect Bank and Other Credits.

Insurance for Philanthropies and Charities.

Employe Insurance.

Annuities.

These men will be experts in these lines and the general economic questions affecting them.

The staff of such an agency is composed of men who enter the business when young, not in undue haste to succeed but determined to work up slowly and surely such a clientage as is secured by trained professional men in other fields. It will not comprise either those who have been unsuccessful elsewhere or who are transients, but agents who from their youth have prepared themselves for the business of life insurance as a career for life and as worthy of, and requiring, the very best that is in them.

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CHAPTER XXII

MEDICAL EXAMINATIONS

BY CLARK W. DAVIS, M. D.

THE theory of life insurance is based on the assumption that among a large group of persons, the mortality rate is practically constant. This assumption, however, applies to individuals that are collected either haphazard or are selected through the elimination of those in poor health. Necessarily the mortality experience will be more favorable among those chosen by means of a medical examination than among those selected without this test. It is often stated by actuaries that a rigid medical examination will influence the so-called mortality curve for a period of only five years. After this lapse of time, the death-rate of the two classes will be practically identical.

It must be remembered, however, that a marked distinction exists between groups gathered haphazard without medical examination and groups self-selected for insurance. It is obvious that a person perceives most clearly the advantages of insurance when he is in ill-health and were companies to recruit their policyholders from risks that applied for insurance on their own volition without medical examination, the mortality would be ruinous to the company. So true is this principle of self-selection that even a careful medical examination does not entirely eliminate it. Most insurance companies show a higher death-rate among policyholders for life insurance than among annuitants who, of course, are accepted without medical scrutiny and, therefore, are purely self-selected. Undoubtedly this slightly higher mortality experience among those applying for the cheaper forms of insurance, such as term and ordinary

life over those buying endowment policies, is susceptible of the same explanation.

It is the function of the medical department of an insurance company to select from the applicants for insurance such risks as will show a death-rate favorable for the forms of insurance that the company offers. In a general way, it may be stated that the medical director endeavors to do this in one of two ways:

1. He either eliminates or declines entirely those who, he believes, will show a mortality higher than the expected, or

2. He offers those who are not first-class risks some form of insurance whose cost has been increased commensurately with the extra risk assumed by the company.

This latter method is known as sub-standard insurance.

The medical director draws on several sources of information for supplying himself with the data necessary for this selection. The most important, of course, is the medical examination as submitted by the medical examiner; but reports from commercial or credit agencies, statements made by the soliciting agents and the action of the same or other companies on previous applications for insurance assist in the work.

The medical examination can be conveniently divided into three parts:

Part one is the application proper, in which the prospective policyholder gives his full name and address and all former residences, states the form and amount of insurance desired, the premium he expects to pay, his occupation past and present with full particulars, his employer's name and address, his age, date of birth, place of birth, beneficiary and the relationship of beneficiary, the amount and plans and dates of other insurance carried in the same or in other companies, his exper-

ience with other companies as to whether he has been declined, limited, postponed or treated as sub-standard risk and the reason for such adverse action. Frequently non-medical questions, such as a contemplated change in occupation or residence, or hazardous pastimes, such as automobile racing or aerial ascensions, are inquired into. A statement is often requested as to form of settlement made, whether by cash or by note. Where the beneficiary named is not closely related and dependent a full explanation of the insurable interest is asked. This application blank, which is often on a sheet of paper separate from parts two and three, is filled out by the applicant, signed by him and the signature is witnessed by the agent. The medical examiner is usually permitted to read these statements before making the examination.

Part two of the application deals principally with the past medical and present family history of the applicant. It comprises a series of carefully worded questions for whose proper answer the advice or assistance of the medical examiner is necessary. The applicant is asked whether he believes himself to be in sound health. Previous diseases are carefully inquired into and usually a list of the more important or commoner affections are given, so as to assist the applicant's memory. A special description with full particulars is required of those occurring in the past five or ten years. Pathological conditions which are of especial significance from the insurance standpoint are generally dignified by being placed under separate headings. Thus any impairments of vision, of hearing, of discharges from the ears, of previous surgical operations, of exposure to tubercular infection, or of occurrence of insanity in family history are prominently brought to the applicant's attention. The habits of the applicant with regard to the use of narcotics and the daily consumption of alcoholic liquors are noted,

with especial reference to occasional or continual over-indulgence in intoxicants in the present or in the past.

An important section of this part is the record of the family history. A statement is required of the ages and condition of health of the parents, brothers, sisters, and grand-parents, if living; if dead, the cause of death, age at death, condition of health preceding the fatal illness, whether or not tuberculosis or other constitutional diseases were suspected and date of death are noted. Necessarily the medical examiner assists greatly in filling out the section on family history by his ability to diagnose the probable cause of illness or death from the description of symptoms given by the applicant. Part two is signed by the applicant and witnessed by the examiner.

The third part of the application for insurance comprises principally the objective findings of the medical examiner as the result of a thorough physical examination. The general appearance, race, sex and probable age are asked; also the exact height in shoes and the precise weight in ordinary clothing on accurate scales, with a discussion of any recent marked changes in weight. Then there follows a series of medical questions, designed to bring out the results of a thorough examination of the heart, the arteries, the pulse, the pulse-rate, the lungs, the respiration, the circumference of the chest at forced inspiration and expiration, the girth of the abdomen, and the condition of the abdominal organs. In order that the medical examiner may not neglect any point of consequence, the question respecting each item is asked separately and requires a separate answer or description. The eyes, ears and certain tendon reflexes are tested to detect the possible presence of nerve diseases. The temperature of applicant is recorded. A urinalysis is necessary in every case and this includes an examination for albumen, sugar, specific gravity and chemical reaction. A general survey is then made by the examiner to

discover the presence of any tumors, ulcers, skin eruptions, hernias, etc., also to disclose any evidence of past bad habits with reference to alcohol or narcotics. In women, questions are asked regarding affections peculiar to the sex. If married a complete maternity history of any children born, and of the complications attending the births is necessary. Many companies insist on knowing whether the husband carries insurance and why the wife applies for insurance.

The examination ends with a query whether the examiner believes the applicant to be a safe risk for insurance. Part third is ordinarily signed only by the medical examiner, who at the same time, gives the date of the examination, the date of his graduation from medical college and the name and character of his medical school.

Where large amounts of insurance are applied for, it is customary to have two physicians perform the examination. At the same time, a sample of urine for microscopical examination and for more elaborate chemical analysis is sent to the home office of the company.

It is usual for the examiner after completing his work, to send part two and three to the agent, who checks it up for omitted answers and then forwards it to the home office of the company for final disposition. The objection to this plan is obvious in that it occasionally gives the agent opportunities of learning facts from the application which the examiner intended only for the eyes of the medical director. Many companies, therefore, adopt the plan of having the blanks sent directly to them without the intervention of the agent.

Having been received by the insurance company and properly recorded, the application is now carefully reviewed by the medical director, or his assistants, and while, of course, the director is influenced and guided by the recommendation of the medical examiner, it is,

nevertheless, true that the science of medical selecting requires much skill, experience, and, within recent years, considerable statistical knowledge. The majority of risks present very little difficulty in their selection. Given an applicant, with a favorable occupation, an evident need for insurance, good family and personal history, excellent habits and a normal body, the task of selecting is very simple. Difficulties, however, begin to present themselves where there is some variation from this healthy, normal, average type and the matter becomes more complicated where two or three impairments co-exist in the applicant. Fortunately the medical directors have received much assistance, through the co-operation of the actuaries, from the tables prepared by them. Elaborate investigations are constantly being made with a view of determining the exact experience of insurance companies with risks presenting certain definite impairments. As an illustration, there may be cited the investigation by Dr. Brandreth Symonds entitled, "A Statistical Study of Renal Colic and Hepatic Colic." Out of 1742 entrants giving a history of renal colic, 290 doubtful cases were eliminated, leaving 1452 who gave a distinct history of this impairment. The material, however, was not homogeneous in respect to physique, residence, etc. Overweights, those residing in foreign countries or in the Southern States and those having more than one attack were excluded. This left a group of 892 lives practically homogeneous and without impairments other than the record of a single attack of renal calculus.

The policyholders were now studied in various ways to determine the mortality among them at different ages, at different years after the history of the attack, at different periods of insurance in force, etc. A single table will illustrate one of this series of studies.

Mortality Grouped into Decades

Age	Actual No. of deaths occurring	No. of deaths expected	Per Cent.
30-39	20	25	80%
40-49	23	19.4	118%
50-59	11	8	137%

It will be noted from this table that persons who give a history of one attack of renal colic but who are otherwise apparently first class risks have a low mortality (80 per cent. of the expected) at ages 30 to 39; the mortality (118 per cent.) is unfavorable at ages 40 to 49 and it is very high (137 per cent.) at ages 50 to 59. As has been stated previously, the existence of two or more impairments has a tendency vastly to complicate the problems, inasmuch as several impairments may not be viewed as affecting the risk in an arithmetical sense. Occasionally, one defect will greatly exaggerate the risk imposed by a second. Thus in a young man with a history of hemorrhage from the lungs, the existence of light-weight is a most serious handicap; on the other hand, one impairment may almost destroy the effect of another—the existence of heavy-weight has a tendency to neutralize the history of blood-spitting in a young applicant. Companies that do not issue sub-standard insurance, will ordinarily accept risks presenting impairments that in the judgment of the medical director are not sufficiently serious to cause a mortality rate above the average or expected. A few of the practices followed by most companies will illustrate this principle.

Applicants who are over weight or under weight are ordinarily accepted provided the variation does not exceed 15 per cent. or 20 per cent. Since it is the experience of companies that persons who are under weight

enjoy a more favorable mortality with advancing years, the medical director rules less rigorously with lean applicants of advanced years. As a rule a man 25 per cent. under weight will be accepted at the age of 50. Contrariwise, however, is the experience with heavyweights. Advancing years makes them less desirable and, in consequence, the medical department either rejects outright heavy elderly persons or if middle-aged, offers them some form of endowment insurance that will terminate before the period of heavy mortality manifests itself. Some impairments are of significance for only a short period of time. Thus rheumatism is a most serious defect if one attack has occurred in the past year or if two attacks have taken place in the preceding five years. This is owing to the tendency of rheumatism to produce valvular disease of the heart, which frequently does not progress sufficiently for detection by the medical examiner for a period of a year. These applicants are, therefore, declined until a year has elapsed after a single attack or until five years have supervened after two attacks. Three recurrences, indicating a marked predisposition to rheumatism, cause declination absolutely. An interesting impairment is the one cited above with relation to renal calculus. Persons giving this history are evidently good risks until the age of 40 or 45 and may be safely insured at these years. Beyond this age, however, they are unprofitable for standard insurance.

Certain other impairments are constant or non-varying. A railroad fireman, who is otherwise first-class, remains constantly an undesirable risk at ordinary rates so long as he pursues his occupation. Companies generally meet this form of hazard by charging five to ten dollars extra per thousand per year for the insurance. This is in reality sub-standard insurance in principle, but most companies who otherwise confine their business

to standard policies adopt some schedule of extra rates for hazardous occupations.

It will be seen from the above examples, that every impairment has its own characteristic curve and so long as the medical director confines the risk which the company assumes to those periods of the curves where it does not soar above the normal line, it is possible for him to keep the mortality experience comfortably within, or even below, the normal standard. In fact, the skill in medical directing lies not so much in maintaining an extremely low mortality—this can be effected very easily by selecting only gilt-edged risks—as it does in keeping the experience well within the normal by offering insurance to those who are of only average desirability.

Extremely interesting are the cases of so-called moral hazard. By moral hazard, in the broader sense, is meant an effort to secure insurance not for the purpose of protecting some person legitimately interested in the life of the applicant, but for purposes of speculation or through fraud. A mother, a wife, an unmarried daughter, a widow or a minor son suffer through the death of a father or brother or other bread-winning member of the family. But the insurable interest becomes more speculative, where a wife names a husband or a grandmother names an adult grandson as beneficiary. Rarely insurance is applied for solely to further the purposes of a crime. Among the really interesting and fascinating stories of business life, where truth almost usurps the realm of fiction for intricacy of plot, belong some of the experiences of life insurance companies dealing with applicants attempting to secure policies by fraud, substitution, forgery, feigned death or double identity. It is a comfort for the medical director, who must constantly be on the watch for such practices, to know these frauds are perpetrated with great difficulty unless both agent and

examiner co-operate. It is a tribute to both that these cases are rare.

The description given in the preceding paragraph will elucidate in a general way the methods employed by companies writing sub-standard insurance. A definite knowledge of the impairment is, of course, necessary; as is also, an exact appreciation of the mortality to be expected. The additional hazard imposed by the impairment is then met by one of the following methods:

By adding an additional charge to the premium.

By advancing the age of the applicant and requiring him to pay the premium of that age.

These methods while not mathematically perfect, are probably the best and most equitable. Occasionally other methods are employed:

To reduce the face value of the policy in event of death within a certain stated period.

To offer endowment or term policies to terminate the risk at a fixed age.

To offer an endowment policy, which on account of the rapidly increasing reserve, diminishes the amount at risk with proportionate rapidity.

Ideally sub-standard insurance is a greater economic necessity than the standard form, for the reason that the man in poor health is, *pari passu*, in greater need of insurance than his more robust neighbor. Unfortunately at times, the hazard is so great that the extra premiums mount to an almost prohibitive figure and thus the plan becomes impracticable for many impairments.

Not the least important duty of the medical director is the selection and appointment of the medical examiners. A large insurance company ordinarily issues policies in almost every state and county in the union. It is, of course, impossible for the medical department to come in direct personal contact with its examiners. Appointments are made partly on the recommendation of the

agent who is in the field and meets the physician; but for the most part, the medical director is compelled to rely, in making his choice, on the age, the experience, the character of the medical education and the opportunities for post-graduate work which the physician sets forth in his application for the position. The correspondence, which is frequently interchanged between the home office and the examiner, will give a clear insight into the eligibility of the physician, especially where the subject under investigation happens to be some intricate medical impairment.

The duties of the medical examiner are by no means light. Much tact is required in handling applicants who are possibly only lukewarm in their enthusiasm to take out insurance. Patience and finesse are needed to bring to light obscure events in the applicant's family or personal history. A thorough physical examination must not be made hastily nor in justice to the applicant should it be unnecessarily prolonged. The temptation is always strong, in the face of provoking the disfavor of the agent or the applicant, to minimize the seriousness of impairments. Strength of character and loyalty to the company are necessary attributes of the successful insurance examiner. Once, however, a strong bond of confidence is forged between the examiner and the medical director, the union becomes of incalculable value to the company.

It is the hope of the medical department that the future may bring forth much useful knowledge as a result of the combined activities of the medical directors and insurance actuaries. Physicians in private and in hospital practices are unable on account of the sparseness of material, or the inability to trace the subsequent history of their patients or lack of exact mathematical and actuarial knowledge, to collate reliable figures showing the influence on longevity of the various illnesses they are called upon to treat. The doctor is usually satisfied

to have cured the immediate distress attendant upon such diseases as typhoid, rheumatism or syphilis. It is the function of the medical director to look ahead twenty, thirty or forty years and, no doubt, while he and the actuary are collecting their statistics so necessary for their insurance work, the way will be blazed for the medical profession in its effort to prevent disease, to anticipate pathological conditions and thus to prolong life.

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CHAPTER XXIII

COMMERCIAL LIFE INSURANCE

BY STEWART ANDERSON

COMMERCIAL life insurance is a conserving and developing agency which business in the United States—big business, little business, business in general—is employing to an unprecedented extent. Within the last two or three years the business world seems to have discovered that life insurance can be even more useful to business than it is to the home, for whereas in the home it often merely modifies the financial injury caused by death, in business it can absolutely prevent that injury. And the volume of commercial life insurance now being issued is so great, and is so greatly increasing, as to indicate that the time is fast-coming when the life insurance policy will be almost as integral a part of corporate and co-partnership structure as are the charter, the bond, and the stock certificate, and the articles of co-partnership.

At the outset let us take note of the close relationship between business and the home, in order that the utility of business life insurance may better be shown. To maintain life is labor's great first cause. The ditch-digger, the mechanic, the printer, the clerk, the carpenter, the employer, each works first of all for food, clothing and shelter. And as the home-centered life is the usual life, he works usually first of all to provide food, clothing, and shelter for a family. Hence, business, in the person of the employer, is primarily occupied in maintaining a home—speaking very generally, of course. Therefore, business welfare means home welfare, and adversity in business is liable to cause home adversity. And so, any agency that preserves a business from disaster usually

performs the coincident service of preserving a home, or homes, from disaster.

There is no need to call to the minds of experienced business men cases of business and family disaster caused by the destruction of a business through the sudden death of an official or a valued employee of a corporation, or of a valued employee or a member of a co-partnership. Every sizable community has its examples. The surviving employers or partners once again become employees, often at less than a living wage, and are broken-spirited and embittered by the realization that they are stranded on the banks of the onrushing river of life and can never reach the golden harbor of their dreams—the work, the hopes, the ambitions of years sunk deep, never to rise again. And sometimes—yes, how often—the screaming headline tops a story of a broken brain, a broken body, a wearied or frenzied deed, and a grave that ends all. And the home? Removal to a smaller house or to an upper tenement, maturing sons or daughters—the parents' pride—called home from college, and the younger boys taken from school and put to work—the yoke thrust upon them forevermore, while yet they should be playing and gathering strength for the burden of life. A blighted home! Sweet may be the uses of adversity in training saints for a home on high, but cruel are the uses of adversity when lives are ruined and children are deprived of the best of their chance in life. But suppose there is no family, no home. Why then the disaster is less in extent, because there are fewer participants; yet the suffering of the central figure is still almost unendurable, and the ruin of his life still may be complete. And the pity of it is, that by the employment of a simple and easily available precaution, these disasters could have been prevented.

A mournful picture? Yes. But, as everybody well knows, it is a common one. It is drawn here to emphasize

vividly that heart strings reach from homes into that swirling, multitudinous organism which we call business; and to show the height and depth and breadth of the service which commercial life insurance is so successfully rendering.

And now let us pass on to the more obviously practical side of the subject. As has been said, commercial life insurance is an agency for the conservation of business, and for the development of business. By conservation we mean the creation of stability by the prevention of partial loss or total destruction through death. By development we mean the enlargement of business by the use of capital or credit.

In the conservation of business many other kinds of insurance, highly useful because deeply needed, are employed,—fire, casualty, surety, employers' liability, title, plate glass, etc.,—but none of these, except casualty (and that only in case of accident), defends against loss or destruction caused by the death of a man who is the blood, brains, gold, and very life of the business. Curious omission, dangerous neglect, is it not?—fire? insurance; embezzlement? insurance; accident to a workman? insurance; title? insurance; broken pane of glass? insurance!—but against staggering loss or the supreme disaster of total ruin following the snuffing out of a man upon whom the whole fabric of the business rests—*no insurance!* And that snuffing out occurs in innumerable cases as quickly and as suddenly as the smashing of a plate-glass front. Business has greater need of life insurance than of any other kind, because it is the only form that completely encircles with impregnable protection against utter destruction through death.

This protection is commonly found in insuring the lives of partners or the life of some man who in one capacity or another is vitally necessary either to the existence of the

business itself or to its present prosperity. Here are some examples:—

It may be an officer of a company on whom its bank or other credit rests, whether because of his executive ability or his worth as an indorser and financier, or both. His sudden death might so impair the company's credit as to destroy the business unless a large amount of cash were quickly brought in. Life insurance would immediately provide the cash, which would carry the company along until its credit confidence was restored. And, of course, if he were an indorser for the company, the insurance money would relieve his estate from responsibility.

Or it may be that the corporation is to put out an issue of bonds. The nature of the business or of its organization is such that the death of one man might overthrow the company, in which event liquidation might fall short of redemption of the bonds in full. But if that man's life is insured, on the endowment plan, for the amount of the bond issue, and for the express purpose of safeguarding buyers of the bonds, then if he died before the bonds matured the corporation would be in possession of enough ready money to redeem the bonds at once, if that were necessary or desirable; or if it was found that the business could continue, the corporation would put into a sinking fund so much of the insurance money as, improved at interest, would suffice to take up the bonds at maturity, and the remainder of the insurance money would go into the business. The endowment policy is an easy means of meeting a matured bond issue, and of protecting investors; and protection of this character gives salability to the bonds, or increases their salability. This plan is in actual operation.

In a manufacturing business is frequently to be found a man who alone has the chemical or mechanical or practical knowledge for combining the elements of a product into the finished article of the necessary unrivaled stand-

ard. His death might inconvenience his employers to the extent of severe financial loss, through the lowering of standard and the consequent losing of customers. Life insurance would indemnify the company or the firm against such loss, and enable it uncrippled to seek and secure his successor.

Nowadays the sales manager of a great business is apt to be a relied-upon man. It is his duty to find and hold profitable markets, to devise sales methods, and to maintain in loyal unity and in vigorous selling power the corps of salesmen. His sudden death might very quickly result in a glut of product through loss of markets and disintegration of the sales force. Sacrifice sales and heavy financial loss would be the almost certain result. But life insurance would supply all the money that the company or firm might lose, and by forestalling the loss make possible the careful selection of a suitable successor.

Or frequently the chief officer of a company is a man whose ripe experience, thorough knowledge, fine executive ability, and rare skill in handling men and situations, have made him the very cornerstone of the business. Severe loss or total ruin, caused by the cessation of credit and the calling of loans, would be the not unnatural result of his unlooked-for death. Life insurance would throw across this unfordable stream a bridge that leads to safety.

These are a few examples of life insurance used as a conserving agency—they will suggest many others. Partners, as well as corporations, have their valued employees.

Not all the insurance on the lives of employees is made for employers' benefit. Policies are constantly being issued whose premiums are to be paid by the employer but whose benefits are for the employee or his family.

And the conservation of business is clearly discernable in such insurance. For it is generally accepted that stability in the producing branch of a business, its labor, has

a beneficent influence upon quality of product and cost of product.

Constant change of help means constant instruction, and where much instruction is necessary there will be imperfection; imperfection causes rejection, and rejection makes loss. Therefore, long service is desirable. And so corporations in increasing numbers are sharing profits with employees or are pensioning them or insuring them. Whatever the motive, if length of service follows, conservation of business results. Life insurance is used by some corporations for their pensioning. This pensioning can be done by means of an instalment policy, which pays the beneficiary a fixed sum each year or half year or quarter or month.

Another method of rewarding and of attempting to bind an employee to the employer is by means of the endowment policy. This insurance is made for the benefit of the employee. If he stays with his employer say twenty years, the insurance will be paid to him. If he dies during the twenty years and while in the service of the employer, his family receives the money. If he leaves the service of the employer during the twenty years, the employer may either surrender the policy for its cash value, or, upon payment to him of the back premiums by the employee, he may turn it over to the employee, who then continues premium payments until the endowment period is ended.

A few words now about partnership insurance. Death frequently winds up a co-partnership business, either because the dead partner was the real head of the firm and the fountain of its credit, or else because his estate demands a cash settlement, which cannot be made and the business continue. Life insurance is a sovereign reliance in such an emergency. For it instantly pours its money into the business. There will be no hasty search for a new partner, no vexatious, embarrassing intrusion by an

inexperienced executor, no litigation, no painful or strangling pressure by creditors. The deceased partner's estate is promptly settled with, and there is money in hand for the payment of notes and accounts as they fall due. "Money talks," and the business survives. Without life insurance how complete might be the ruin! Partnership insurance is an invaluable agency for the conservation of business.

Commercial life insurance conserves business in another way. Its office is not, as some may think, performed at death alone. For in a period of financial stress, whether it be confined to the business of the insured or whether it be general, the life insurance policy that has been in force long enough to have a loan value is usable to the extent of that value to tide over and to save from ruin. In the last panic millions of dollars were loaned by life companies to men and businesses whose banks were calling and not making loans, or to men who, fearing that their credit might be harmed, did not wish their banks to know that they needed money. But for the possession of policies which could be pledged as collateral, thousands of these men and businesses during that time would have gone to the wall. Individual life insurance and commercial life insurance saved them. Here again is the conservation of business.

Life insurance is also an agency for the development of business. It furnishes capital, it creates credit—the other self of capital. Through the loan value of a policy money may be had for the enlargement of a business. This enlargement may be aimed at through a new or a larger building, more machinery, a new line of goods, entrance into new territory, or in other ways. Perhaps the concern's credit has been strained to the limit, and more money must be had. Then comes in the life insurance, and with its loan upon the policy's cash value provides the needed funds.

Or perhaps the concern is a partnership made up of young, enterprising, promiscuous men. The value of the plant and their present volume of business do not warrant credit or more credit. But that value and volume plus the possibilities of the business when managed by men of such quality, would warrant it but for the sole contingency that the death of any one of them might destroy their business. This obstacle is being every day surmounted by means of term life insurance, which, although it has no loan value and therefore has no property value as collateral, makes absolutely sure that the desired accommodation would be repaid if death did intervene. In other words, the banker or manufacturer or jobber will trust the would-be debtors to overcome everything but death. Only insure him against loss through that contingency, and they may have the money; they may have the goods. And this is happening every day.

So, as a provider of money and a maker and extender of credit, life insurance is an agency for the development of business.

Some make the mistake of classing life insurance premiums as pure expense. They fail to take into account the cash surrender value of the policy. All life and endowment policies have a cash value, which increases from year to year. Therefore, the amount paid in premiums is not the cost of the insurance, and should not be counted as pure expense. Suppose that at the end of the fifth or any other year a policy were surrendered for its cash value. To find what the insurance has cost, that is, what its expense has been, deduct the amount of the cash value paid by the company from the total amount paid to the company in premiums; the result will be the net cost, chargeable to expense. Or suppose that when the policy was taken out a life insurance account was opened on the ledger, and kept open. Each premium would be charged to that account, and year by year the increase in cash

value would be credited to it. Strike a balance at the end of any policy year, and the cost of the insurance may be obtained. A premium, on a life or endowment policy, is only in part an expense, for it builds up a cash asset which is as real and tangible as cash in bank or as stock on hand. So that a corporation or a co-partnership when carrying insurance on a life, or lives, for its own benefit adds to its annually ascertainable assets. Wherefore life insurance should rightly be regarded as chiefly an asset.

For commercial uses both the individual policy, that is, the policy covering a single life, and the joint life policy, which covers two or more lives, are employed. If the purpose is to insure the life of an official or valued employee, an individual policy is issued. This is made payable to the corporation or firm, and to it is granted the right to surrender the policy at any time for its cash value and thus to terminate the insurance—which it would probably wish to do if the official or the employee should leave its service.

For insuring members of a co-partnership, both single life policies and the joint life policy are used. If single life policies are taken, each partner's life is separately insured and the policy of each is made payable either directly to the individual survivors, or else, as co-partnership assets, to the firm itself. And whether the insurance is effected by single life policies or by a joint life policy, its cash value, for which it may at any time be surrendered, is in most instances a co-partnership asset, subject to the control of the co-partnership and not to that of the individual. Both the single and the joint life policies are in use and demand, and circumstances, widely variant and peculiar to each case, determine the form to be selected.

Business is not made up altogether of corporations and co-partnerships. The individual business man forms a large portion of the aggregate, and he, too is making

extensive use of commercial life insurance. Once he would take out a policy, made payable to his wife or children or parents, without much regard to the condition of his business. Now he carries a home policy or policies, and in addition he has policies payable to his estate, and these are designed to put his business into instant condition for a successor's management. If he enlarges his business, to cover the temporary risk he takes out a policy. If he mortgages his business property, he covers the debt with a policy. And commonly he carries an endowment policy made payable to himself, thus setting up a fund for his own use when the policy matures and in the meanwhile providing a ready resource for times of stringency and opportunity—a resource that may make the protection of his home policy secure from diminishment or destruction. Also, he, like the corporation and the co-partnership, insures for his own benefit the life of a valued employee.

As a last word I point out that there was a time when life insurance had small repute. That day has passed. For in the host of homes, that no man can number, to which the help of life insurance has come in the wake of death are millions of praisers of its unmatched usefulness. If the widow had no pension, and they could find no estate, and the amount in the savings bank was pitifully small, and her footsteps trembled with the pathos of age—an old mother who had no strong son to support her or no loving daughter to take her home,—or if she was young, and there was no pension and they could find no estate, and only a few dollars, or none, were in the savings bank, and the children were a baby in her arms and skirt-clinging toddlers two and three years old,—there's where life insurance came in, there's where nothing but life insurance could have been relied upon to come in, there's where if life insurance had not come in the ills of life would have rushed in—treading upon each other's heels. And now,

having long and amply demonstrated its power to guard the home, life insurance is with marvelous celerity moving far into the wide realm of business and occupying its posts of danger. It has no rival in supreme service, for there is no similar economic instrument. At the close of 1910 there was in force in the United States more than fourteen billion dollars of old line life insurance, backed by about four billion dollars of assets. Regard these vast sums as destined preventers of misery, as sponsors of hope and ambition, as guarantors of "what all the world's a-seeking"—happiness!—in the lives of a myriad of men, women, and children,—then the figures cease to be merely stupendous, they become also sublime!

CHAPTER XXIV

CONSERVATION OF HUMAN LIFE

BY ROBERT LYNN COX

IT requires no argument to convince the public that life insurance companies should be among the first to take an active interest in all matters relating to public health. Wonder arises from the fact that until very recently such companies have taken little part and displayed even less apparent interest in things which had for their purpose the prolongation of human life.

It has required, however, considerable discussion and many conferences to convince life insurance men that they could and should take the lead in movements intended to postpone death. Some are not yet convinced.

In the early days of the business the main problem confronting company managers was to determine the probabilities of life and death under conditions as they existed. Next in importance was to convince the public that loss of life meant an economic loss which it was the duty of the individual to insure against. Later on competition made it necessary to give thought to the mortality experience of the individual company and exercise caution in the acceptance of risks. This led to the rejection and exclusion of weak and impaired lives, but, with the exception of two or three companies, no effort was made until recently to protect and thereby prolong the lives of those already accepted and insured. It was urged by many, and believed by most insurance men, that a company had no business to do more than compute the risk, whatever it might be, and to insure against it. Viewed solely as a money matter, it was doubtless true that it mattered not how high the loss ratio if it could be foretold with ac-

curacy and preparation be made to meet it by adequate premium rates.

But with the marvelous growth of knowledge concerning the causes of disease came development of the science of preventive medicine. People awakened to the fact that widely extended and definitely known causes of disease could be met by wholesale prevention. Furthermore, men are coming to understand that all problems of common human interest can best be handled by co-operative and concerted action, and that to admit that what is everybody's business shall be nobody's business will not suffice as an answer to the demands of twentieth century civilization.

Insurance companies are learning, as other large associations of individuals are learning, that everybody's business must be attended to by everybody, but that it can be done effectively only through organization and under an authorized leadership; that civic responsibility must be borne by each organization, even though it be a business corporation, in about the ratio it bears in size to the community as a whole.

We as a people are not willing that combinations of capital and a consolidation of financial interests, though legal in form and done under statutory permission, shall afford avenues through which owners of the country's wealth can escape those civic duties incident to citizenship.

Now, in life insurance, as in other forms of insurance, policyholders assume in effect contract relations with each other intended to provide for distribution among the fortunate the unforeseen and unpreventable losses of the unfortunate. Obviously, anything which tends to prevent misfortune reduces the loss and thereby the cost. Love of life may be all that is needed to make the individual do what he as an individual can do to protect himself from disease, but a combination of effort to protect so-

ciety as a whole is quite as necessary in this field as in other fields of human interests. Is it, therefore, surprising that groups of individuals banded together to distribute among themselves the loss occasioned by untimely death should display an interest in a work having for its purpose the saving of such loss in part? This is just what happened when in February 1909 the Association of Life Insurance Presidents opened the forum which its meetings afford, to the discussion of things intended to prevent disease and thereby extend the span of the average human life. Individual companies had hesitated, as very properly they might, about undertaking a work of equal interest to all, the chief benefits of which must of necessity go to others not sharing the burden. But with a chance for co-operation among a considerable number, what had hitherto seemed to be an insuperable difficulty looked more like an opportunity.

Therefore, into this forum men who have made a life work of the study of human conservation were invited to come and present their views. They include scholars who in their official capacity are constantly confronted with the problems of sanitary regulation in their day's work; men of vast experience, who at the same time are deep thinkers along comprehensive lines; men who in their daily grind do not lose sight of the ultimate hope of a nation free from preventable disease. Their suggestions, born of years of thought and experience, have served already to stimulate activity far beyond the immediate audience they addressed.

The subjects and speakers were as follows:

"Economic Aspect of Lengthening Human Life," by Prof. Irving Fisher of Yale University, President of the Committee of One Hundred on National Health.

"A Suggestion Concerning the Increased Longevity of Life Insurance Policyholders," by Burnside Foster, M. D., Chief Medical Examiner of the New England Mu-

tual Life Insurance Company for Minnesota, and Editor of the *St. Paul Medical Journal*, St. Paul, Minn.

"Work of the Federal Government in the Matter of Health Conservation and What May be Done to Supplement It," by Walter Wyman, M. D., Surgeon-General of the Public Health and Marine Hospital Service of the United States.

"The Organization of a Public Health Militia in the Cause of Preventive Medicine," by M. J. Rosenau, M. D., Department of Preventive Medicine and Hygiene, Harvard Medical College, Boston, Mass.

"Latent Powers of Life Insurance Companies for the Detection and Prevention of Disease," by E. W. Dwight, M. D., Medical Director of the New England Mutual Life Insurance Company, Boston, Mass.

"The Fight against Preventable Diseases," by Eugene H. Porter, M. D., New York State Health Commissioner.

"Modern Sanitation," by Alvah H. Doty, M. D., Health Officer of the Port of New York.

"The Work of the Census in Vital Statistics," by Dr. Cressy L. Wilbur, Chief Statistician, Vital Statistics, United States Census Bureau, Washington, D. C.

Following the delivery of the first address noted above, that of Professor Fisher, the Association, on February 20, 1909, named a Life Extension Committee, which from time to time has made helpful reports for the guidance of life insurance companies along public health lines. At the third annual meeting of the Association, held in Washington, D. C., on January 19 and 20, 1910, the Life Extension Committee made a report in which it thoroughly canvassed the relationship of the life insurance companies to the movement for prolonging life. The committee said that the justification of the officers and managers of companies in spending policyholders' money in such work must arise from a reasonable certainty that the

expenditure will result in a reduction of the cost of insurance. The committee also pointed out that there was a legal question as to how far companies may go in aiding a general movement. In conclusion it stated that it would seem that something not only can be done by life insurance companies in the way of preventing disease but that much can be done without involving a great expenditure of funds; that "Certainly no one can question the propriety of utilizing forces and agencies already within control of the companies to the extent it may be done without interference with their other duties. To what extent the movement may be extended beyond these channels it is impossible to determine."

At the bi-monthly meeting of the association held on October 7, 1910, the Life Extension Committee was requested to formulate, if possible, a definite plan "whereby and whereunder the members of the Association may be able to help along, in some systematic way, the movement having for its general purpose the prevention of disease and the extension of the average human life."

The establishment of a Bureau of Health and Sanitation within the Association was decided upon at the fourth annual meeting of the Association, held in Chicago on December 9 and 10, 1910, following a recommendation by the Life Extension Committee. This bureau is now undertaking the collection of statistical information regarding registration laws, health departments, and other agencies showing the extent to which the people in their organized capacity have undertaken to improve health conditions. As suggested in the resolution adopted by the Association, when this work has been done the Association may find it proper in the future to employ one or more experts in sanitation to investigate on behalf of life companies the conditions existing in various localities, and to suggest, when requested, methods of improving these conditions.

The Association through a sub-committee of the Life Extension Committee is also co-operating with committees representing the Association of Life Insurance Medical Directors and the Actuarial Society of America, relative to utilizing for the general public good the results of a mortality investigation that has been under way for more than a year. This investigation involves a review of the physical and mortality records of about fifteen million policyholders, in forty of the representative companies of this country. Every section of the United States is covered in this data, which will afford valuable information as to ratios of mortality geographically. This same investigation also is covering a vast number of occupations.

The movement in the life insurance field for conservation of life is not confined to one organization. It is encouraging to note a desire to co-operate on the part of other organizations. At the fifth annual meeting of the American Life Convention, held in Des Moines, Ia., on September 15, 16 and 17, 1910, the following addresses were delivered:

"The Short Life History," by Dr. Amand Ravold, Medical Director Missouri State Life Insurance Company, St. Louis.

"Insurance Militia, or Forces against Mortality," by Dr. Albert Anderson, Medical Director Jefferson Standard Life Insurance Company, Raleigh, N. C.

"Increased Mortality from Diseases of the Kidneys and Circulatory System," by Dr. W. F. Milroy, Assistant Medical Director The Bankers' Reserve Life Insurance Company, Omaha, Neb.

Local life underwriters' associations and agency organizations within companies are also instituting forums for the discussion of ways and means of prolonging life. A notable example among the former class is the Chicago Life Underwriters' Association. Not only has it listened

to addresses from sanitary experts, including Health Commissioner Evans, of Chicago, but on February 21, 1911, at its annual meeting the association outlined plans for an active and permanent alliance with those organizations which are working for the preservation of health and prolongation of human life.

A "long life banquet" was the apt name given to a dinner held under the auspices of the Iowa Life Underwriters' Association at Des Moines, Ia., in the fall of 1910. It was announced that a series of such banquets would be given. Representatives of the State Health Board and of the Iowa Anti-Tuberculosis Association were among those who made addresses pointing out wherein the life underwriters could aid in prolonging life.

Many life insurance companies, including some of the largest, are taking part in the campaign for longer life. Of the companies represented in the Association of Life Insurance Presidents, practically all are giving support to the movement in one way or another. Many of them are doing practical educational work. Out of a total of nearly thirty million policies in force in American companies at the end of 1910, the companies in the Association carry about 77 per cent. (or over twenty-three million) and of this twenty-three million 97 per cent. are in companies which are now engaged in individual work for health improvement.

There is a group of five companies, having policies aggregating 22,000,000, that make special efforts to stimulate their policyholders to activity in personal and public hygiene. This is done by articles in company periodicals distributed to policyholders and by other literature. One large company has done this for many years. Another company, in addition, co-operates with existing agencies for health improvement, including anti-tuberculosis societies. This same company is experimenting in many cities along the line of sending visiting nurses to

sick policyholders. It also is building a sanatorium for the treatment of employees suffering from tuberculosis. Another company in this group recently established a department of conservation, which plans, among other things, to aid public health authorities in the fight against preventable disease.

There is another group of companies which goes beyond the body of policyholders in its health promotion activities. They advise impaired applicants for insurance as to their physical condition and make suggestions to aid them. There are four companies in this group. Two of them, in the East, have a total of 88,000 policies. Another is a flourishing Middle West company that has about 155,000 policies. The fourth is a conservative, young Southern company, with 8,300 policies.

These are all companies belonging to the Association of Life Insurance Presidents. We have gone somewhat into detail about their activities because we are more intimately acquainted with them. Among the non-association companies, one provides for free periodical medical examinations of its policyholders. Another has formed a health association among its policyholders. Pamphlets on different phases of disease prevention are issued at intervals. For instance, a bulletin issued in the spring of 1911 was entitled "The Milk and Water Supply in our Country Homes." The pamphlet dealt effectively with the subject, showing how epidemics of typhoid fever might be prevented by taking certain precautions.

It is thus seen that the relationship of the life insurance companies to the campaign for sanitary reform has been largely along educational lines so far and its further development will doubtless follow this course. In the last analysis there can be no material progress in this fight for clean living if the movement is not backed by general public interest. This support can be gained only by persistent and extensive educational work. It would seem

that there is no other institution in a position to reach instantly and personally so many people with the appeal that must be made.

One element that is playing an important part in this fight for better health is the public press. By it every person in the country may be reached. It is already devoting much attention to the activities of the different agencies engaged in the war on the causes of disease. This interest of the press is most encouraging, for it is a reflection of the sentiment of the public which it serves. When an address advocating certain health reforms is delivered one afternoon in New York or Chicago and reproduced in the papers of every state in the Union the next morning, reaching many millions of people widely distributed, there must be public interest in the subject. Incalculable good is being accomplished by this dissemination of hygienic truths.

Encouraging support of the activities of the life insurance companies in this work is found in the interest taken by city, state and national health officers. Many of them have gone out of their way to give assurance that the work of life insurance managers is appreciated. A common note among them is an expression of surprise that companies have waited so long before taking up a matter that seems to be so logically and intimately connected with their reason for existence. Many of these officials have been working for years to bring about health reforms in their respective jurisdictions and they welcome co-operation. They have a feeling that the tide of public opinion is turning in their favor; that neither indifference nor petty self-interest will be permitted to balk their plans in the future, as it too often has in the past.

The field of activity for life insurance workers in this great twentieth century fight for freedom from preventable disease is bounded only by the habitations of mankind. Wherever there is a group of human beings,

whether it be in the village, with its pump and well, or in the metropolis with its storage reservoirs, there is a task for the health missionary. The channels through which this work may be carried on are many, and as in other fields of human effort, co-operation will bring the best results. The individual who will go into the highways and byways stimulating others to activity and making common cause with them will reap better results than he who attempts to shoulder the burden alone. As for comparison with him who would do nothing, it is more charitable that nothing be said.

This work of stimulation and education can be carried into the church and its many subsidiary organizations. It can be carried into the schools, where our millions of future citizens may well be trained in personal and public hygiene. The doctrine can be taught in foundries, factories, workshops, in offices, on the farms and among the ditch diggers. In fact, it should be preached wherever people gather for labor, pleasure or instruction.

And what is the goal that would make all this worth while? To the general public, which includes policyholders, it is the benefit to be derived from the conservation of human life—a thing of enormous economic value. Also an escape from that terrific strain put upon human sympathies by early and untimely deaths. To policyholders as such, it will mean fatalities prevented, deaths postponed, premium payment periods extended and the cost of insurance thereby reduced.

It is idle to say that such results cannot be foretold with certainty nor guaranteed as to extent. What men want they strive for, what they hope for they insist upon seeking. If the object is worth while, they do not parley long as to the cost. To live as long as possible is the aspiration common to all men. This movement is a fight for life and more of it. Who can better lead in it than those who would share in the financial as well as personal benefits

to be derived? If a chance on results is to be taken, who can better afford to take it than those who have this double interest in the prize that may be won?

For these and other reasons quite as obvious, life insurance companies are taking an active part in the world wide movement now under way to prevent disease and thereby prolong the average span of human life.

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CHAPTER XXV

NECESSITY OF LIFE INSURANCE TO BUSINESS

BY ELBERT HUBBARD

I ONCE saw a check drawn by a life insurance company for an even million dollars. It was payable to the estate of the late Frank Peavey of Minneapolis. The check went through and was paid just as my check for one hundred plunks is paid. It was simply a matter of bookkeeping. Of course a million dollars on the life of a man is a good deal of money, but just please remember that Frank Peavey was a million-dollar man. And there are several thousand of these million-dollar men in America today, and we are evolving more all the time. In fact, we need them, and badly, too. The million-dollar man of old, like Napoleon or Cæsar, manifested his power mostly in destruction. The modern million-dollar man is a creator, a conservator and a builder.

In passing it is worth noting that Peavey paid just two premiums on that policy, and before the third payment became due the policy matured. Peavey was a superb risk, morally and physically, but pneumonia is a joker and picks the strong to show us the frailty of human existence.

That million dollars, paid over in one lump sum, smoothed the way for the Peavey Elevator Company at a time when cash was urgently in demand. And the beneficent value of business life insurance was so pressed home that Peavey's successor, the new president of the Peavey Elevator Company, as well as the vice-president, took out policies for five hundred thousand dollars apiece on their lives, payable to the company.

A Million-Dollar Woman

There are one hundred and five boy babies born to every hundred girls. And yet there are nearly a million more women in America than men. Women outnumber men in every country where statistics are kept. Women live longer than men; and self-supporting women are now regarded as especially good risks by all the great life insurance companies. There are quite a number of men in America who carry a million dollars life insurance, but I know of only one woman who is insured for this amount.

This is Mrs. Netcher, chief owner of the Boston Store in Chicago.

When Mr. Netcher died, a few years ago, he left one life insurance policy of just half a million dollars.

On this policy he had paid but one premium. There were several little policies, which he had been carrying for some years, but these were all thrown into the shadow by the big one. The business was fairly flourishing, but this half-million dollars enabled Mrs. Netcher to clean up every liability against the store, and have a goodly bank balance, in addition.

Mrs. Netcher thought that she could not better use this money than by extending the business. The Boston Store she regarded as a memorial and a monument to her beloved husband who had founded it. So she set herself the lifelong task of increasing and bettering the business. She would serve the public, and she would serve the employees of the store.

The value of life insurance had been brought home to her mind so vividly that she insured her own life, payable to the business, for seven hundred thousand dollars. In September, 1909, she took out \$300,000 more; in February, 1912, \$200,000 more; making the entire amount carried \$1,200,000.

Mrs. Netcher is a cautious and safe financier. Yet she buys big when she believes that the market is right. She lets no cash discount escape her. A certain manufacturer

told me that she made him an offer on a line of goods, sending a draft for \$20,000 with the order, on account, with request that the draft be returned at once if the offer was not acceptable.

It takes tremendous will-power to return a big New York draft—few men are equal to the test. This man wasn't. Mrs. Netcher knew her man, and she got her goods at actual cost. This shows her quality—and yet I am told that women can't do business in a big way.

The Bon Marche

Mrs. Netcher, next to Madame Boucicault, of the Bon Marche in Paris, is the greatest woman storekeeper the world has ever seen.

Aristide Boucicault and his wife built up the Bon Marche from very small beginnings. They grew as the business grew. When Monsieur Boucicault passed away, Madame Boucicault devoted herself to the work with renewed devotion. And she it was who marshalled the enterprise to its proud position of the greatest retail store in the world. The human betterment features and the daring initiative were hers.

The life of Madame Boucicault has been a great inspiration to Mrs. Netcher, and it looks now as if this modest and gentle woman, of splendid brain and noble courage, will do in America what Madame Boucicault has done in France—aye, and do it better.

Strictly Personal

When the memorable financial blizzard was on, in November, 1907, no one in East Aurora was aware of it, but myself, the Missus and the Cublet. We knew it. With us it was no theory. All the rest got their pay on time. We skirmished, kited, sweat blood and smiled.

Other folks in the cities near, who had a deal more doladoci dough than we, were paying their people in scrip. We had a valuable stock of books, but nothing was

transpiring. Pay-day was coming with damning regularity, and sundry papermakers were yelling like baseball fans, for money.

Then it was that I laid the case before a financial man I knew in New York. He took my figures and said he would give me an answer in three days.

The answer came. If we would bond the entire Roycroft plant for one hundred thousand dollars, he would take the issue at par, provided he held a life insurance policy on my life for a like amount.

I answered, "Why the life insurance?"

And I have the reply by me now. Here it is:

"Your brains are the chief asset in this business. Your mind is a think-factory. Your output is ideas.

"Your initiative evolved the business, and you know the work in every part. The buildings were built and the machinery installed with your mental raw stock in mind. With you there, the value of the plant is reasonably assured. With you gone, it is a conjecture. My people would not consider a loan for an instant without the insurance on your life."

Whether my sky-piece is like a sky-scraper as a financial asset, and possesses the value my friend placed upon it, is largely a matter of assumption.

But granting for argument's sake that the man was right, we get an idea of the estimated value on the Rialto of two things—brains and life insurance.

Luckily, the storm blew over, the sun came out, and I was able to pass up the proposed loan. But just to add to my peace of mind and as an aid to sweet sleep o' nights, I placed a little policy on my life payable to The Roycrofters Corporation.

A Great Merchant

Another somewhat similar case came to the surface when Harry Selfridge opened up his great American store in London. The Selfridge store is a success beyond

a doubt, but when Selfridge asked the London bankers for a little accommodation they requested the privilege of examining his life insurance policies. And the wires flashed the news that Harry Selfridge carries life insurance to the extent of a million dollars.

And surely it would be a poor bargain to send this daring, tireless man of enterprise down among the dead men at the bottom of the sea in exchange for even several million dollars. His brain is a valuable asset, simply because it is a big producer of wealth. When this brain ceases to work, the insurance companies will pay over the million dollars, and the great American Store in London will get along as best it can without the Chief.

They will miss him, but the million dollars will steady the craft over the shoals and shallows until another big man can take his place at the wheel.

A Roman Invention

The idea of the corporation was a device of the Romans. It ever excited the admiration of Lord Coke, who called it, "a body without death, a mind without decline." But the corporation does not absolutely become a body without death, unless you insure the lives of the men whose genius built it up.

Life insurance is a good thing, or it is not. The consensus of opinion, the *Zeitgeist*, says it is not only a good thing, but a necessity of modern times.

Business is built on confidence.

The greater our faith in each other, the more safe, secure and enjoyable becomes the voyage of life. And life insurance, to a great degree, eliminates the distressing and disturbing factor of death. It makes of society and business a body without decline. To use the language of Professor Ernst Haeckel, "It gives us financial and social monism." It makes for unity and oneness. Also, it makes for morality, for the boozier and the bounder can not secure insurance. Life insurance cements the social

fabric and gives security and peace in place of fear and doubt.

Not a Charity

It is time to get rid of the idea that life insurance is a quasi-charitable or benevolent institution. It is no more a matter of charity than is fire insurance. No sane financial man would accept a mortgage on property not insured; and when the man asked insurance on my life he was simply following out the same general commercial policy of sound financiering. It is true that life insurance had its rise in benevolence, and its first manifestation was a passing of the hat for the afflicted family. But now it is a matter of business. A life insurance policy is a commodity. Its value lies in the ability of the company to keep its contract.

No Immunity From Death

Life insurance can not make a man immortal, but it can prevent an earthquake shock to his estate when Charon beckons and he has to go.

However, in the interests of exact truth, as a physician, I am positive that a life insurance policy is a strictly sanitary, hygienic and antiseptic proposition. It tends to equalize circulation, favors digestion, makes for sweet sleep o' nights, giving an inward peace that argues for length of days.

Life insurance is one of the great modern factors for the elimination of poverty. It works to abolish the element of chance from the body social. Instead of leaving his family to the uncertain and frequently cold charity of relatives and neighbors, the man makes a business provision for them.

Commerce is Human Service

Commerce is no longer exploitation. It is human service, and no business concern can hope to prosper which

does not meet a human need and add to human happiness. The indiscriminate giving to the poor was a mistaken policy. It tended to make poverty perpetual. Now we aim to give just one thing, and that is opportunity.

Business aims to render life safe and secure. To supervise wisely the great corporations is well; but to look backward to the days when business was polite pillage and regard our great business concerns as piratical institutions carrying letters of marque and reprisal, is a grave error, born in the minds of little men.

Charity and piracy are things of the past. They were always closely akin, for pirates were very charitable, and ever in their train were troops of sturdy beggars.

Business will yet do away with graft and begging. Reciprocity, co-operation and mutuality are the important words now. Laws for the regulation of trade should be most carefully scanned. That which hampers, limits, cripples and retards must be done away with. That which gives freedom, security and peace must be encouraged. We are moving toward the sun-rising; and no man can guess the splendor and the riches and the beauty that will yet be ours. Let America lead the way!

CHAPTER XXVI

ASSESSMENT LIFE INSURANCE

BY MILES M. DAWSON

IN A certain sense insurance of all kinds is essentially mutual. That is to say, the claims will be payable, if the business is to be successfully conducted and, therefore, to continue, not out of contributions made by the companies or individuals who underwrite the risks, but out of the premiums paid by the insured. In the last analysis, therefore, the cost of the insurance is borne by the insured who have merely prorated among themselves, according to the underwriter's estimate of the hazards, the aggregate amount of claims and other expenditures, and the margin of profit to compensate the underwriter for his trouble and the risk which he has taken.

In its earliest and simplest forms, also, insurance was mutual, as, for instance, the benefits paid by the middle age guilds. The earliest form of marine insurance, such as practiced by the traders of ancient Rome, was also that of mutual guaranty in a sense, although it was more nearly of the form of the modern Lloyds, in that the underwriters limited their respective liabilities.

The earliest form of level premium life insurance, also, was purely mutual. It was introduced by the "Society for the Equitable Assurance of Lives," now known as the "Equitable Life Assurance Society" of London, or "The Old Equitable," established in 1762. At the time there was so much distrust of the newly discovered method of level premium life insurance that, although men could be found who would go into a mutual society, and, as the event proved, who would even assume unlimited liability in such a society, it probably would not have been possible to secure an ample capitalization, such

as the parliamentary committee, appointed to consider granting a charter, demanded. In denying the petition for a charter, they pointed out that the purpose could be secured by a "voluntary unincorporated association" as it would be known nowadays, which merely meant, by forming an "unlimited liability partnership" that would render each member liable for the debts of the association to the amount of his whole fortune.

This company, however, was not an assessment company in the usual acceptation of the language. Instead, it was a level premium company charging what it believed to be adequate premiums and purposing to maintain adequate reserves, which, in fact, it has always done, with the result that it survives to this day.

At the same time there was reserved in its original "Deed of Settlement," the privilege to assess its members if it should be necessary to do so, which privilege, owing to the adequacy of its premiums and reserves, it has never exercised.

More than fifty years earlier, however, there had been organized an ambitious mutual association on the assessment basis, which, although of a peculiar nature and not similar to the usual assessment plans of modern days, will serve to illustrate the fundamental difference between the two forms of mutual organization. This company was known as the "Amicable Corporation," and to it was granted a royal charter, which was considered by its members and management for a long time, to be an exclusive or monopolistic grant, with the result that they appeared in opposition to the petition of the incorporators of the "Equitable."

The original plan of this society was as follows: That members should be admitted up to a certain number only, that each of these should pay in the same amount per annum, and that at the end of the year the amount paid

in should be divided pro rata among the beneficiaries of those who died during the year.

It will be observed that under this plan the amount to be paid at death was indeterminate, while the amount to be paid in assessments or premiums was definite. Usually in associations of the assessment type the contrary has been the case, viz.: that the amount to be paid in assessments is indefinite and fluctuates with the requirements, while the amount to be paid in event of death or of whatever other exigency is insured against, is usually definite or at least is expected to be a given amount.

The " Amicable " had not been in operation many years before the amount which would be paid upon the division of the collections for the year was more than it was deemed wise to pay, and accordingly, the rules were modified so that the amount payable in event of death should not exceed a certain sum.

This course has been followed very frequently in assessment insurance, even when the amount or number of assessments which may be collected, or both of them, are not limited. It does not seem, however, to be a necessary feature of an assessment plan unless the amount and number of assessments to be collected are fixed and limited.

It will be observed that this early assessment plan was not " post mortem " *i. e.*, that the collections were made, not to pay claims for deaths which had already occurred, but at certain fixed intervals and without regard to the number of such deaths or the aggregate amount of the death claims. This is noteworthy because in the more recent and larger development of assessment insurance, it was at one time thought that the feature of collecting the assessments to pay claims only after they had accrued, was essential in order that the plan might be assessment.

In Great Britain, the assessment plan, as applied to life insurance, had very large development in the eigh-

teenth century. There were literally thousands of such associations organized, for the most part furnishing very small death benefits but relatively large sick benefits. On account of their faulty plans and particularly on account of inadequate sickness insurance rates, due to the unfortunate circumstance that the first sickness insurance statistics published were those of certain Scottish Highland societies, where the sickness rates were remarkably low, a very large number of these societies succumbed. The idea, however, spread, some of the institutions, such as the Manchester Unity of Odd Fellows, the Ancient Order of Foresters, and the like, became very large, and have even continued in existence to this day with ample resources and in a nearly, if not completely, solvent condition, when judged by strict, actuarial standards.

Their fortunate escape from the almost necessary consequences of the defects of their early plans is chiefly traceable to the fact that the death benefits were very small and also that they were operating almost exclusively among the industrial classes who could purchase such insurance only on a weekly or monthly payment basis, for which regular life insurance companies necessarily had to charge much higher rates than the ordinary. As will be seen hereafter, the defects of the system as applied to life insurance would otherwise certainly have carried down all of these institutions.

The same defects, as will also be seen hereafter, are to be found in assessment sickness insurance, but they are not so deadly and do not so quickly show themselves; and it is possible also more readily to offset them by a timely increase in rates and the adoption of proper measures to secure and maintain the necessary reserves.

One form of the friendly society or assessment association which, shortly after the middle of the eighteenth century, was exceedingly popular for a time, was that of

widows' annuity funds. This also minimized for a time the necessarily fatal defects of the purely assessment system as applied to life insurance, because the benefits were not payable in one lump sum, but instead were paid in frequent instalments until the remarriage or death of the widow. These societies simply assessed a sufficient amount to meet the current disbursements so that, at the outset, for a considerable time, the cost was very low and the fact that a sufficient amount was not being collected to assure that the widows of the members who had already died would receive their annuities during their widowhood, was not taken into account at all.

The attention of Dr. Richard Price, whose great work on "Reversionary Payments" became the earliest text book on level premium life insurance mathematics and the computation of reserves, was first directed to these problems by reason of his interest in the subject of widows' annuities; and his well-grounded suspicion that these various funds were not upon a sound basis, and must, of necessity, fail after a time, was soon confirmed. It was during the course of his search for mortality tables which would enable him to demonstrate the unsoundness of these plans, that he brought forward the famous Northampton table which, for nearly a century, remained the standard table in Great Britain. He also tested the premiums of the "Old Equitable," then a struggling young institution, by the same table, and found that it was charging ample premiums to provide the benefits which it promised; and accordingly, he meted out to it a full measure of praise and commendation, in marked contrast with the condemnation which he visited upon the other institutions. They not long afterward demonstrated the entire correctness of his conclusions by fading out of existence, leaving hundreds of widows of men who had relied upon them to protect their families, without the promised life incomes.

Assessment life insurance first made its appearance in the United States upon a considerable scale about fifty years ago. Prior to that time there were a few branches of British friendly societies and a few American fraternal societies, organized on the same general plan, which gave sickness benefits and small funeral benefits. This some of the grand lodges of the Independent Order of Odd Fellows still make provision for, or permit it to be made by their subordinate lodges. These benefits, however, were on a semi-charitable basis and were for small amounts of life insurance and the cost of the sickness insurance was much greater than that of the life insurance. The things which prevented these lodges becoming utterly insolvent were doubtless the two facts that the other lodge benefits outweighed, in the minds of the members, the relatively small outlay for this insurance, and also that many of them treated the benefits as virtually fraternal charity and made no application for them in case of sickness.

It was not until the Ancient Order of United Workmen, intended to be a trades union or labor organization, was formed at Meadville, Pa., in 1868, by "Father John Upchurch," that assessment life insurance in the form which became very familiar in the United States was introduced here. As a mere incident of the organization and as one of its many benefits, "Father Upchurch" incorporated the provision that there should be one dollar paid upon the death of each member into a common fund, to go to his widow.

It was not long until there were so many members that, first, \$1,000 could be paid in this manner, and afterwards as much as \$2,000; and it was obvious that the membership was so rapidly increasing that very soon the amount of the benefit would be very large. Had this gone on unchecked, there is little doubt that the fundamental error involved in the plan would soon have come to light, with

the consequence that assessment life insurance would never have got into full swing in this country.

At this stage, however, the laws of the order were amended so as to limit the amount of the benefit in event of death, to \$2,000.

An exceedingly large membership was built up, reaching at one time a total of about 500,000 persons. The membership was scattered throughout the United States and Canada and federated in grand lodges to which as "separate beneficial jurisdictions," the furnishing of the death benefit was turned over by the supreme lodge, which became merely a connecting representative body with ample authority to advise but with little power to legislate in such manner as to bind the entire membership or the separate grand lodges.

The organization of this fraternity was followed, at no great interval, both by the formation of several other societies, also composed of lodges, and of very many other local societies which did not utilize the lodge system.

These loose organizations, which later, as some of them reached a fuller development, came to be known as "business assessment associations" to distinguish them from "fraternal societies," sprang up and grew like mushrooms. Wherever there was neglect, not only of the correct actuarial principles of insurance, which was universal, but also of considerations concerning state of health, age, etc., their prosperity, of course, was short-lived and after a time they defaulted in their payments and passed out of existence by the scores and hundreds.

The phenomenon of the sudden appearance of these associations and the popular favor with which they were received is not to be explained solely by the appearance of a prototype in the Ancient Order of United Workmen. They could not have sprung up and flourished as they did, had not the soil been prepared for them. That was pre-

cisely what had taken place, and was still taking place in the period from 1860 to 1880, during which they enjoyed their most remarkable growth. The conditions were as follows:

Regular life insurance, later with ample premiums and reserves, had got under way in the United States originally with ample premiums only. The earlier companies did business on purely a stock or non-participating basis, charging excessive premiums and reserving as they pleased. Very little business was transacted—so little that when about 1835, it was proposed to charter a second company in New York, the one existing company, the New York Life Insurance and Trust Company, sent its representatives before the legislature and successfully opposed the granting of this charter on the ground that it was doing very little business, and that there certainly was not enough for two. Similar conditions existed in Massachusetts and in Pennsylvania, in which also there were stock companies, accepting such business as was offered to them, but making no effort to obtain business, and charging premiums which were excessive.

A little later, mutual companies were organized which also charged ample premiums, but were to divide the surplus among their members. At first, the managers knew nothing about the necessity for reserves or about determining the amount of reserves which should be held, and accordingly dividends were very large at the outset. The interest rates were high, mortality low, cost of new business not more than from 5 per cent. to 15 per cent. of the first premiums, and surrender values were not allowed. In consequence, even when reserves were set up, it was still possible to rebate in the form of a dividend, a very large proportion of each renewal premium. Such dividends were at times as high as 50 per cent. of the premiums, and 30 per cent. or 40 per cent. was common. This gave the impression that insurance cost

and was worth a great deal less than the full premiums and as the participating premiums were, even when charged at the full rate, less than the stock companies had been charging, the latter in the three states mentioned all went out of the life insurance business, leaving the field to the mutuals and to stock companies which were organized afterward and most of which did business on a participating plan, competing with the mutual companies.

These elements of surplus were so large for a time that it is not extraordinary that the view should have got such headway that the premiums were much higher than were required.

Thus, after fifteen years operation or thereabouts, the Mutual Life Insurance Company of New York reported through its actuary that its gains by forfeiture of reserves had been alone sufficient to cover more than its entire expenses, aside from payment of claims.

Under normal conditions by 1860 at furthest, this situation would have righted itself by the earnings being greatly reduced through increase in cost of new business, and in general expenses, as also by the introduction of surrender values, then at hand. The same view, however, continued and indeed deepened in the years between 1860 and 1870 because of the use of a device known as the "loan note plan" under which a note for from 30 per cent. to as high as 50 per cent. of the premium was taken, which was collectible in fact, if not in terms, only out of the proceeds of the policy, and which, the policyholder was led to believe, would be offset, principal and interest, by the annual cash dividends. These dividends were usually applied first to pay the interest and then to reduce the amount of the indebtedness, with the result that the policyholder was for several years at least, paying only from one-half to two-thirds of the full premium.

In the period 1860 to 1870, and especially after the war,

the patronage of life insurance was greatly increased. During this period, also, many of the companies commenced to grant surrender values. About the close of the period, the failure of several of the companies which had been doing business on the "loan note plan" to earn dividends large enough even to take care of the interest on the accumulation of indebtedness, had become evident. Moreover, the settlement of claims showed that the policies often, and indeed, usually had large accumulations of indebtedness against them, and accordingly, these settlements were very unpopular.

By these occurrences, the public was not convinced that insurance necessarily costs more money than it had been represented to them it would cost; but instead came to three conclusions, viz.:

1. Insurance ought not to cost over half of the usual ordinary life premium because not over half of such premiums is currently paid out in death claims.

2. One reason why it was costing more was because an utterly unnecessary reserve was being piled up—the "fifth wheel of a wagon" it was very picturesquely denominated.

3. The extravagant expenses of the companies also accounted in large part for the excessive cost.

Tables of so-called "separation of premiums" were prepared and circulated which showed them to be composed of "three elements," viz.: "expense element" or loading, "mortality element" or cost of insurance, and "reserve element" or deposit towards an accumulating reserve. It was loudly heralded that the first of these was too large, the second was sufficient to pay all the death claims, and the third was an absolutely unnecessary addition; and this was generally believed, especially by those who had themselves been bitterly disappointed concerning the cost of annual dividend insurance, and by those whom they reached and influenced. Two move-

ments, neither of them without its good feature, but both of them bringing in their train many evils, as well as many benefits, sprang up in the ground thus prepared for them.

One of them was the assessment life insurance system here dealt with.

The other was the tontine system, introduced into regular life insurance in the early seventies, under which the public was led to believe that there was a great speculation in the forfeitures of the values of life insurance policies by those who lapsed or died, provided the same were accumulated and divided among the survivors. This had the double advantage from a competitive standpoint of getting entirely away from the annual dividend business, and also of appealing to the popular conviction that the reserves were unnecessary, and that there were enormous gains from their forfeiture.

The failure of a large number of regular life insurance companies in the seventies and early eighties, caused a wide-spread loss of confidence in these companies as a class, and a feeling that a mutual assessment association which did not collect any more than it needed to pay its current claims, was as secure as these crumbling life insurance companies, and also did not involve a loss of a dollar, even in case they did fail, since they collected on the post mortem basis.

All of these things operated to cause a very large proportion of the residents of the United States, who merely desired the protection of their families without investment to turn to these associations; and, on the other hand, caused the regular life insurance companies to be looked at by the public and even by their own agents, and, in some cases, their own officers, as institutions which dealt in investments, "with life insurance thrown in." In other words, the life insurance companies largely abandoned this field—though not without some effort to

retain it, as for instance, by the organization of the Provident Savings Life Assurance Society, to do a natural premium business and by the introduction of renewable term insurance by the *Ætna* Life Insurance Company and the United States Life Insurance Company—to the assessment associations and fraternities, and in any event, this is certain, viz.: that for about two decades the companies which were doing a tontine business showed an enormously greater growth than the others.

In the first third of that decade, indeed, notwithstanding the growth of the “tontine” companies, the amount of insurance in the regular companies of the country was reduced by the failure of some of them, and by the enormously heavy lapse rate in others, by about one-third.

The very hard times prevailing during that period may have explained some part of this, although a period of similar depression after 1893 did not produce such results, because, perhaps, at that period, there was widespread and deserved confidence in the institutions. At the same time, doubtless, the purchasers of life insurance for the protection of their families were, in the early seventies, strongly convinced that it was desirable to buy it as cheaply as possible, if only the claims were pretty certain to be paid if death took place during the year.

Under these conditions there was an enormous growth of assessment life insurance, especially during the two decades from 1870 to 1890. A very large proportion of this went to the fraternal beneficiary societies; but for a time some of the “business assessment associations,” such as the Mutual Reserve Life Association and the Security Mutual Life Insurance Association of New York, the Massachusetts Benefit Association, the Fidelity Mutual Life Association of Philadelphia, the Northwestern Masonic Aid Association of Chicago, and the Covenant Mutual Aid Association of Illinois, and others, bade

fair to equal the fraternal beneficiary societies in number of members and volume of insurance in force, and also more than equalled them in accumulation of resources, which latter calls for further explanation.

The earliest "business assessment associations" very soon disappeared. They were organized on the "pass the hat" plan, of post mortem assessments, *i. e.*, on the basis of collecting "so much" upon the death of each member, and turning over the proceeds, after making a liberal deduction for expenses if not provided for through a system of quarterly "dues."

These concerns were mostly local or connected with some particular profession or trade; and in many cases, their financial, medical and other affairs were run as loosely as their insurance matters. They also not infrequently admitted people at advanced ages, the managers actually asserting that it paid to have losses because it advertised the business. It is no jest that it would have been much safer to insure any one of their members than to have insured the organizations themselves, even under a policy terminable at the end of one year.

Those which were organized among members of the same trade or profession, however, not infrequently secured the services of men who were at least too wise to do these things. Their motives, likewise, were often on a higher plane. In consequence, these associations showed greater vitality and continued to grow, even when the early ideas of getting along with very few assessments had to be abandoned.

The "business assessment associations" which did not confine their membership to a given locality, soon adopted the agency system and pushed out for business like any other insurance company. These were the earliest to catch the idea that, while it was doubtless "unnecessary" to have "legal reserves," it would be a good thing to have some money on hand. So they began

to require the payment of "an assessment ahead," and later adopted the plan of requiring certain amounts to be paid into "a reserve or emergency fund" which, however, was not of the same nature as the "legal reserve," condemned by them as useless, but was merely a fund to be drawn upon in order to avoid levying extra assessments in case the mortality should be "beyond 10 per 1000" or "beyond the losses according to the American Experience Table of Mortality." A mortality table was in those days generally used by them, as if the man who is introduced at thirty, remains of the same age and subject to the same rate of mortality as long as he lives. Under these provisions, notwithstanding, some of these companies came to have very considerable resources, though in almost every case very much smaller than would be required in order to carry out their policies at the rates of premiums and assessments which they were collecting.

The "business assessment associations" at a very early date introduced one important change from the original plan of the Ancient Order of United Workmen, which was, as stated, that of "flat assessments," the same without regard to age. The plan which was introduced was that of "graded assessments" fixed according to age upon admission, but to remain the same during the continuance of the membership. These graded rates were in most cases determined upon, with reference to the rates of mortality according to one of the standard tables at ages upon admission, and since they did not increase as the members grew older, they were in fact, if not in theory, always based upon the mistaken conception of the rates of mortality according to the standard tables that, once one was insured, the rate for that age would be good in his case, so long as he remained insured. Of course, this is not true; and after a time that fact was

brought home to the managers of many of these associations and a different attitude was taken.

The new attitude was that the graded rates of assessment were merely means of equitably distributing the entire loss and that "new blood," meaning thereby the admission of new members, would "keep down the death rate," so that it would run along at a fair average; and, being distributed according to this graded system, the cost would be assessed fairly and equitably against the various policyholders. In support of this, it was pointed out that the premiums of regular or "old line" companies were also graded according to ages at entry, and were not increased as the insured grows older. When the fact was presented that the old line premium provided a reserve to assist in maintaining it level, the reply was made that the reserve was unnecessary if the "new blood" enabled the association to keep its death rate at an equilibrium.

There was an element of truth in this; but, had it been entirely true, the "flat assessment plan" would really have been the most equitable in the end, for the entire truth is that, if compulsion were exercised, and, for instance, all persons living in the United States at and over the age of twenty, were required to be insured for \$1,000, and each was required to contribute an equal amount toward the payment of the claims, the cost would obviously be the same for all who were insured, and also would be level or nearly level from year to year, the only variation being on account of the salubrity or insalubrity of the seasons, or the like.

The trouble with this proposition, as applied to voluntary insurance upon the "flat assessment" plan or the "graded assessment" plan, is that, as soon as the cost approaches the so-called "equilibrium"—meaning thereby the rate which might possibly be maintained if all could be compelled to insure upon reaching a certain

age, and to remain insured until death—the younger members begin to drop out, and an increasingly smaller number of new members is secured, so that the conditions necessary to sustain the equilibrium are not and cannot be maintained. Under these conditions, the aggregate cost, and thereby the cost to each individual, increases by reason of the disproportion of old members, and after a time becomes prohibitory or virtually so, with the result that the institution fails.

As the imperfections and perils of this system became more and more manifest, the managers of several of the “business assessment associations” adopted the plan of charging a “stipulated premium,” thereby not merely collecting in advance the estimated cost of insurance until the next assessment was payable, and also accumulating a so-called “reserve or emergency fund,” but accepting the idea that the insurance should be paid for on a basis which would furnish funds to equalize the cost as the member grew older. They did not, however, plan to accumulate the “legal reserve” which they still condemned as excessive and unnecessary, but, instead, fixed their premiums at a point materially lower than those of the regular or “old line” companies, and in most cases, without regard to the scientific requirements, as, for instance, merely by adding a certain percentage of the rate of mortality at the age on admission, or a certain number of dollars per \$1000 insured.

The manager of one of the assessment associations, however, the Fidelity Mutual Life Association of Philadelphia, caused the “stipulated premiums” of his company to be computed on a basis, which, taking into account lapses at certain assumed rates, would, in his opinion, the company allowing no surrender values, enable the rate to be kept level. This, of course, the company did not guarantee and indeed could not, and it has not been wholly realized; but the result was the collection

of a good, though not a sufficient amount of premium, the accumulation of considerable resources, the inculcation of correct actuarial principles, and a full recognition of the requirements that an institution of this character should be solvent in the sense that it should be able to show mathematically that it can perform its obligations. The defects in the assumptions in regard to lapse were not so great as to wreck the institution, and, after a long and thorough trial of this plan, the association was successfully reorganized as a regular mutual life insurance company, and has prospered.

Several other "business assessment associations" have also successfully reorganized as regular or "old line" companies, either mutual or stock, and have dealt with their assessment membership chiefly in the following manner, viz.: by carrying out their contracts with such of them as did not transfer to regular "old line" plans, abandoning their assessment policies. In such cases, the cost to those who persisted upon the assessment plan, has naturally been high; but they at least have had the advantage that the death claims were paid and that their insurance was good for its face, instead of being utterly wiped out by the failure of the institution. In one or two cases, this reorganization was attempted at too late a date, or was accompanied by such extravagance and mismanagement that the reorganized company was not successful.

The development of the natural consequences of the assessment system among the fraternal beneficiary societies was much slower. It was a decade or more, indeed, before any of them adopted even the "graded assessment" plan. It was much longer before the idea found lodgment that they should collect assessments in advance, and particularly that they should accumulate a considerable fund. In fact, for a long time the test

whether an institution was "genuinely fraternal," was whether it accumulated money; if it did, it was not.

Two things tended to prolong the period, viz.: the strong fraternal tie, and the other benefits of a fraternal and lodge relationship, on the one hand, and the much greater economy of management, on the other. In consequence of the latter, the total cost, including expenses, remained moderate as compared both with the cost in the "business assessment associations," and also in the "regular" or "old line" companies, and the former kept and keeps many men in these organizations through a sense of loyalty, long after it has ceased to be financially to their benefit to continue.

The "stipulated premium" idea never found any lodgment, really, among fraternal societies, either in the haphazard form or in the more scientific form, such as was introduced in the Fidelity Mutual Life Association. They have, however, introduced two other ideas which did not put in an appearance among "stipulated premium" companies, viz.:

1. The "natural premium" plan, which was introduced by the National Union and distributed the cost on the basis of increasing rates from the lowest age upon admission, viz.: eighteen, to the age of sixty years, stopping short, however, of the logical completion of this plan by failing to make any increase after the member attained the age of sixty years.

2. The "level premium" plan, with the rates computed according to mortality tables lower than the so-called "standard" tables, *i. e.*, the American Experience and the Actuaries' tables, but deduced either from the experience of the society itself or from the experience of several societies, which was combined in a table, known as the "National Fraternal Congress Table."

The fraternal beneficiary societies, which adopted rates based upon such mortality tables, have usually,

though not always, readjusted the rates of all their members on this basis, in which case, when this has been undertaken, the change has encountered much opposition and has also resulted in the lapsing of a large proportion of the membership; but in several cases it has been entirely successful, and in most cases, when there were no complications to face, other than those arising out of the change in the rates of the premiums, has been sufficiently successful, so that the institution was enabled to go on with good prospect for permanency.

The first readjustment of this character was that of the Expressmen's Mutual Benefit Association of New York, one of the oldest of the fraternal societies confining its membership to a single occupation. This association readjusted in such manner as to enable it to carry full net level premium reserves by the American Experience Table and 3 per cent. interest, with a substantial surplus and also to rebate about one monthly contribution per annum, by way of dividend.

Other instances of successful readjustment are the Royal League, the Knights of the Maccabees, the Ladies of the Maccabees, and several of the separate beneficiary jurisdictions of the Ancient Order of United Workmen, such as the jurisdictions of Quebec, Maine, New Hampshire, Connecticut, Delaware, West Virginia, North Dakota, Manitoba, British Columbia, Oregon, Arkansas and Louisiana.

Other readjustments were made on an insufficient basis; and in consequence the societies either failed or further readjustment was undertaken. In one important society, the Royal Arcanum of Massachusetts, repeated readjustments have already been made, the last one claiming to have been on an adequate basis, taking into account lapses; but it is already apparent that another will be required, if the matter is dealt with that way.

Until 1910, it was everywhere supposed that, as had

been held by the British courts concerning the friendly societies of Great Britain, fraternal beneficiary associations could readjust the rates of assessment, and that the action of their representative bodies in this regard would be binding upon the membership. There were not many decisions upon the subject; but such as were to be found seemed without exception to uphold this view, although it had been held that an amendment of the rules which reduced the benefits, was a violation of the contract with the member. In the year 1910, the Supreme Court of the state of Iowa, in an expression in one of its opinions, which is really obiter, indicated its view that such readjustments would be deemed unlawful by it; and this was followed soon afterward by two decisions of the Court of Appeals of the state of New York, flatly to the same effect. A new hearing was asked, the former chief justice of that court appearing as counsel in praying for the same; but it was refused. One of the same cases came before the court later, after being retried in the court below, the purpose being to endeavor to present the matter in a new light; but the decision was again unanimously the same. This has since been followed by a decision of a vice-chancellor in the state of New Jersey, that such a readjustment is not permitted under the laws of that state.

These decisions have not had the effect of completely, or in great part, destroying the readjustments which have already been made; because most of the members have acquiesced in them and most of those who objected have abandoned their membership. But, in spite of the fact that some other courts, such as the Supreme Court of Connecticut, in an obiter expression in a recent opinion, and the Supreme Court of Texas in a direct opinion upon the subject, have held adversely to the views of the Court of Appeals of New York, it is doubtful whether any further readjustments will be successfully carried

through, since the road to enjoin the same is now plain, unless adequate statutory right can be given and is given. This is attempted under the so-called " Mobile bill," which has been adopted in several states; but the constitutionality of this act has not been tested and, if it be held as a matter of fact that the readjustment is a breach of contract, then statutes " impairing the validity of contracts " would be even more certain to be deemed invalid, because unconstitutional.

Partly in consequence of this and partly because it is obviously a much easier method to introduce, though by no means so immediately effectual, the idea has been making headway among fraternal beneficiary associations that readjustments should be brought about by closing the old assessment class to new members and opening a new class upon adequate rates and with provisions for adequate reserves, which also must, it would seem, make of the mortuary contributions of the new members, a trust fund for the benefit of themselves and their beneficiaries only, in order that these funds may not be absorbed in meeting the deficiencies of the assessment class. Under such a plan, those members of the assessment class who desire to transfer to the adequate rate class may do so, being granted that permission for at least a reasonable period without medical examination, while those who persist in the assessment class, are assessed according to the original basis for the payment of death claims arising therein.

This system was adopted by the Knights of Pythias Endowment Rank, even before such decisions had been rendered, the same being deemed especially consistent with the closing of one class and the opening of another which had been the practice of that institution from the outset. It has since been adopted by some others and very recently was determined upon by the Bankers Life Asso-

ciation of Des Moines, Iowa, the one important surviving "business assessment association."

The constitutionality of this plan has already been before the Supreme Court of the United States twice, and is beyond question; but the carrying out of the same is not without its perplexities and perils, as was shown in the decision as to preferences by the Circuit Court of the United States in the winding up of the Mutual Reserve Fund Life Insurance Company.

The assessment plan has also been applied to accident insurance with a very considerable measure of success, some of the associations having been in existence now for several decades. The accident hazard, of course, is not an increasing one; and if the risks are well selected, there appears to be no reason why a stable rate of assessment may not be maintained. The system actually in use is really of the nature of "the stipulated premium" plan because payments are fixed in advance, but the right to assess is reserved.

In the United States there has been no great development of sickness insurance on the assessment plan except among foreign workingmen who have built up in this country small, local institutions of the same type as in their own country, usually without taking the trouble to incorporate the same.

CHAPTER XXVII

FRATERNAL LIFE INSURANCE

BY A. R. TALBOT

Origin

It is conceded by historians who have thoroughly investigated the records, that fraternal beneficial societies are of Anglo-Saxon origin, developed from the old English Gilds. These gilds or brotherhoods, are known to have existed in great numbers before there was a king in England, and in their inception had for their object conviviality and good fellowship, gradually developing into care of their associate members in times of sickness or in the event of death. Thus the great Friendly Societies of England were developed, followed years afterward by fraternal insurance organizations in America. This gradual evolution has covered a period of nearly 1,200 years. The word "gild" is of Saxon origin, originally meaning "a rate payment," but later construed to mean a payment in money, from which we have the word "gold," thereby showing that a regular payment of dues was required by these societies in the early days. In addition to dues and membership fees, it is known that wealthy members of the gilds often made donations or left to the societies sums of money by will. These gilds and later the friendly societies, originated ritualistic or secret work rites for the purpose of creating interest in the local organizations and binding the members together in closer unity. With material modifications, this idea was adopted by fraternal beneficiary societies in their local lodge system.

The origin of fraternal beneficiary societies in America dates back to October, 1868, when John Upchurch, a me-

chanic living in Meadville, Pa., conceived the idea of forming an association among his brethren for the purpose of affording protection for the families of deceased members. He called a meeting of his fellow workmen and laid the foundation for what became the Ancient Order of United Workmen, which is popularly known as the pioneer of these institutions in this country. Upchurch desired to provide and establish some practical form of protection for the family of wage-earners and men of moderate means whose daily compensation, as their family grew up, would not permit them to carry insurance for any substantial amount in the regular insurance companies.

Development

From this small and humble beginning the fraternal insurance societies of America have grown, until their combined membership has now reached 8,000,000 men and women, in about 300 organized societies, with insurance in force of \$9,000,000,000. These societies since organization have paid out in death losses more than \$1,500,000,000. If to this total we were to add the benefits paid by the various societies for sickness, disability and temporary relief, the disbursements on that account would add \$500,000,000.

The men who organized and conducted these institutions in the early days were admittedly unskilled in the science of life insurance, knowing little, if anything, about mortality tables or the cost of protection. For that reason, in the beginning, little attention was paid to age or physical condition, and each and every member of the organization contributed a like amount upon each call for funds. As the societies developed the unfairness of these conditions was recognized and overcome and the standard and rules of admission were raised, tables were formed regulating payments to the mortuary fund, according to the ages, but based upon arbitrary standards.

A post-mortem form of collecting assessments was followed in the early days, but as time went on and business expanded, managers and membership of these societies soon came to recognize the laws of mortality, and the necessity of applying sound insurance principles to the conduct and management of this system of insurance. As a result of this gradual development in the business of the fraternal societies, sufficient experience and exposures were gained to enable actuaries to compile a fraternal insurance mortality table, known as the National Fraternal Congress Mortality Table, this particular title of the table being given it because of a federation of fraternal societies having been formed for conference purposes and for mutual interests, under the name of the National Fraternal Congress. Later on another federation of fraternal societies known as the Associated Fraternities of America was organized and with these two congresses practically all the fraternal beneficiary societies in America are identified. In the year 1910, a special commission was organized by the Associated Fraternities of America to formulate a new fraternal insurance experience table to be known as the American Fraternal Mortality Table, and this commission will take for its basis the combined mortality experience of practically all fraternal beneficiary societies in America, whereas, the National Fraternal Congress table was compiled upon the mortality experience of a limited number of societies.

At the present time a number of fraternal insurance organizations are operated and conducting their business upon what is known as the "current cost plan." That is to say, the assessment rates charged the individual members are graded according to the age at entry, but at an arbitrary figure and sufficient assessments may be called to meet the death losses from month to month. On the other hand a large number of societies are operated under what is known as "adequate rates" by charging the

actual cost of insurance at the various ages, and at the same time providing for a reserve or surplus fund to take care of any deficiencies that may have been created in the past, or that will relieve the cost at the older ages. In other words the fraternal beneficiary societies in America are gradually readjusting their plans and methods of doing business, so as to provide for the necessary mortuary contributions to meet all outstanding liabilities by limiting the assessments to twelve in any one year and providing for the payment of such contributions at a fixed and sufficient amount payable annually, semi-annually or quarterly, in addition to the monthly plan as in vogue during the past forty-two years.

So vast and far reaching are the interests of these societies, with 20,000,000 persons in the United States and Canada vitally concerned in the objects and results of these institutions, that practically all the states now have definite and certain laws regulating their conduct and business affairs. The most important development along this line culminated within the past year by an agreement between the Insurance Commissioners' convention and representatives of a majority of the fraternal insurance societies of the United States, whereby a uniform law, known as the Mobile Bill, has been enacted, and is now on the statute books of sixteen states, with the understanding that the same law will be enacted in other states at an early date. This bill contains as its principal features the following provisions:

(1) Not later than June 1 of each year, beginning with the year 1914, a complete report of valuation, certified to by a competent actuary or accountant, shall be mailed to each beneficiary member of the society.

(2) The legal minimum standard of valuation shall be (1) the National Fraternal Congress table of mortality, or (2) at the option of the society, any higher table, or (3) the society's own experience, provided it equals at

least twenty years and covers no less than 100,000 lives. Whatever basis of valuation is employed, whether the congress table, any higher table, or the society's own experience, the report of valuation shall set forth fully the facts in this regard.

(3) Where a society offers disability benefits, the valuation of such benefits must be separate and apart from the valuation of death benefits, and the funds for such disability benefits must be kept separate and apart from all other benefit and expense funds.

(4) Such valuation shall not be considered or regarded as a test of the financial solvency of any society, but the society shall be held to be legally solvent so long as the funds in its possession are equal to or in excess of its matured liabilities.

(5) If the valuation of December 31, 1917, shall show that the society is less than 90 per cent. solvent, the society shall be required thereafter to reduce such deficiency at a rate of not less than 5 per cent. of the total deficiency during each succeeding triennial period thereafter.

(6) If at any succeeding triennial valuation after December 31, 1917, a society does not show such percentage of improvement, the superintendent of insurance may, "in the absence of good cause shown for such failure," institute proceedings for the dissolution of the society; provided, that any society shown by any triennial valuation subsequent to December 31, 1917, not to have made the improvement required, shall within one year thereafter correct such deficiency in percentage of improvement. Failure so to do shall require the society to suspend the admission of new members, except upon rates of contribution which shall be sufficient to provide for meeting the obligation contracted when valued upon the basis of the National Fraternal Congress table or any higher standard, and the contributions and funds of new

members thus admitted must be kept separate and apart from the other funds of the society until the required improvement is shown by valuation. If the next succeeding triennial valuation does not show such required improvement, then new members thus admitted may be placed in a separate class and their certificates valued as an independent society in respect to contributions and funds.

Form of Government

The system of life insurance represented by fraternal beneficiary associations should not be confused with the so-called mutual companies, as they are entirely separate and distinct, both in form of organization and membership control. The fraternal system is intended to afford protection at the lowest cost and to be operated without profit to anyone, with the management and control vested in a democratic form of organization, by the members. For this reason in practically all societies, there is a supreme body holding either annual, biennial, or triennial conventions, with general control of the entire society, for the election of officers, the formulating and amending of by-laws, and outlining principles and policies for the government and conduct of its business. The unit of these societies, however, is the local lodge, camp, tent, council, court or whatever the local body is named. These bodies select their own officers and elect delegates at stated intervals, usually to attend a state convention, at which time delegates are elected upon a basis of membership by county or district to the head or national convention. In some societies this idea of representative government is so thoroughly carried out that the local body every three years elects delegates to the county convention, from the county convention delegates are sent to the state convention, and from the state convention to the national gathering. Thus the absolute control of the societies is vested entirely in the membership at all times.

Growth and Standing

At the beginning of the year 1911, the combined membership of the fraternal beneficiary societies of United States and Canada had reached a total of 8,000,000, in good standing, embraced in 116,000 local lodges. As an indication of the vast business transacted by these societies it may be pointed out that during the year 1910, 1,130,000 new members were admitted and the amount of new insurance written covering these members equalled \$1,140,000,000. Their total income for the year was \$116,750,000, disbursements \$100,370,000.

As showing the relative standing and strength in membership of the various societies the following list comprising practically all of the fraternal beneficiary societies in the United States and Canada on January 1, 1911, is submitted:

Modern Woodmen of America.....	1,166,207
Woodmen of the World (Sov. Camp).....	563,466
Royal Neighbors of America.....	284,107
Knights of the Maccabees of the World.....	283,848
Knights of Columbus.....	248,962
Royal Arcanum.....	245,458
Independent Order of Foresters.....	236,509
United American Mechanics, Jr. Order (Ben. Degree)....	161,423
Ladies of the Maccabees of the World.....	159,488
Modern Brotherhood of America.....	156,254
Catholic Order of Foresters.....	144,644
Brotherhood of American Yeomen.....	139,162
Ladies Catholic Benevolent Association.....	118,527
Supreme Tribe Ben Hur.....	116,278
Brotherhood of Railroad Trainmen.....	113,871
Knights of the Modern Maccabees.....	102,975
Woodmen of the World (Pacific Jurisdiction).....	102,444
Knights and Ladies of Security.....	100,383
Woodmen Circle.....	91,554
National Protective Legion.....	91,281
Canadian Order of Foresters.....	78,104
Protected Home Circle.....	78,034
Knights and Ladies of Honor.....	74,265
Knights of Pythias (Insurance Dept.).....	71,799
Improved Order of Heptasophs.....	70,755

New England Order of Protection.....	67,834
Court of Honor.....	66,169
Brotherhood of Locomotive Firemen and Enginemen.....	71,398
Polish National Alliance.....	71,335
Ancient Order of Gleaners.....	65,634
Mystic Workers of the World.....	64,227
National Union.....	64,096
Women's Catholic Order of Foresters.....	62,523
Degree of Honor, A. O. U. W.....	61,920
Catholic Mutual Benefit Association (Sup. Council).....	60,340
Ladies of the Modern Maccabees.....	51,409
Women of Woodcraft.....	50,308
Canadian Order of Chosen Friends.....	48,738
Fraternal Brotherhood.....	47,865
Workmen's Sick and Death Benefit Fund.....	46,267
Fraternal Aid Association.....	41,944
Workmen's Circle.....	38,866
United Workmen, Ancient Order of (Grand Lodge for Ontario).....	37,820
United Workmen, Ancient Order of (Grand Lodge for Nebraska).....	36,590
Societe des Artisans.....	36,570
United Workmen, Ancient Order of (Grand Lodge for Kansas).....	35,061
United Workmen, Ancient Order of (Grand Lodge for Massachusetts).....	31,920
Massachusetts Catholic Order of Foresters.....	31,887
Fraternal Union of America.....	30,716
Daughters of America (Ben. Dept.).....	30,405
Royal League.....	30,376
Loyal Americans of the Republic.....	29,868
Royal Highlanders.....	28,542
Equitable Fraternal Union.....	27,617
Odd Fellows Relief Association of Canada.....	25,683
L'Union St. Joseph du Canada.....	25,273
American Insurance Union.....	25,036
L'Union St. Jean-Baptiste d'Amerique.....	24,680
Order of the Golden Seal.....	24,255
Brotherhood of America.....	24,220
Mutual Protective League.....	23,978
Catholic Mutual Benefit Association of Canada.....	22,861
American Patriots.....	21,438
Fraternal Mystic Circle.....	21,095
United Workmen, Ancient Order of (Grand Lodge of Minnesota).....	21,004
Alliance Nationals.....	20,988
Order of Canadian Home Circles.....	20,381
Knights of Honor.....	19,024

Home Guards of America.....	18,899
Catholic Knights of America.....	18,537
United Order of the Pilgrim Fathers.....	18,462
United Order of the Golden Cross.....	17,863
Beavers Reserve Fund Fraternity.....	17,597
United Workmen, Ancient Order of (Grand Lodge for Iowa).....	17,023
American Nobles.....	16,441
Catholic Benevolent Legion.....	16,156
German Beneficial Union.....	16,087
Association Canado-Americaine.....	15,930
Sons and Daughters of Justice.....	15,779
Royal Benefit Society.....	15,772
Columbian Woodmen.....	15,610
Modern Protective Association.....	15,554
United Artisans.....	15,315
North American Union.....	14,569
Independent Western Star Order.....	14,314
Homesteaders, The.....	14,156
United Order of Foresters.....	13,836
Order of Scottish Clans.....	13,753
Yeomen of America.....	13,035
Modern Order of Praetorians.....	12,427
Artisans Order of Mutual Protection.....	12,191
Woodmen of the World (Canadian Order).....	12,075
Order of Columbian Knights.....	11,979
Catholic Relief and Beneficiary Association.....	11,879
Grand Fraternity, The.....	11,754
National Annuity Association.....	11,659
New Era Association.....	11,541
Modern American Fraternal Order.....	10,466
United Workmen, Ancient Order of (Grand Lodge for South Dakota).....	10,463
Lithuanian Alliance of America.....	10,051
Catholic Knights and Ladies of America.....	9,935
Fraternal Reserve Association.....	9,738
Independent Order Free Sons of Israel.....	9,480
Shield of Honor.....	9,132
Western Catholic Union.....	9,033
Empire State Degree of Honor.....	8,408
Catholic Knights of Ohio.....	7,706
Modern Samaritans.....	7,660
Triple Tie Benefit Association.....	7,503
Mutual Aid Society of the German Lutheran Synod.....	7,373
Degree of Honor, A. O. U. W., Grand Lodge of Kansas....	7,339
United Workmen, Ancient Order of (Grand Lodge for Washington).....	7,110
Fraternal Reserve Association.....	7,042

Fraternal Bankers Reserve Society.....	7,080
Loyal Association.....	6,740
Particians, The.....	6,610
U. S. Letter Carriers Mutual Benefit Association.....	6,372
Aid Association for Lutherans.....	6,196
American Benefit Society.....	6,159
Order of Mutual Protection.....	6,033
National Mutual Relief Association.....	5,873
Royal Catholic Mutual Protective Society.....	5,488
North Star Benefit Association.....	5,324
Royal Templars of Temperance.....	5,186
Loyal Mystic Legion of America.....	
Vesta Circle.....	5,009
Daughters of Columbia.....	4,869
Workmens Benefit Association.....	4,726
Mystic Toilers.....	4,693
Loyal Guard.....	4,647
Independent Order of Puritans.....	4,638
Independent Scandinavian Workingmen's Association....	4,594
Pension Life Society.....	4,413
Fraternal Benefit League.....	4,351
United Workmen, Ancient Order of (Grand Lodge for Connecticut).....	4,347
National Fraternal League.....	4,340
United Benevolent Association.....	4,105
American Stars of Equity.....	4,098
Royal Achates.....	4,067
Church Fraternal.....	3,816
United Workmen, Ancient Order of (Grand Lodge of Okla- homa).....	3,591
Life and Annuity Association.....	4,307
Union Fraternal League.....	3,507
Fraternal Life and Accident Association.....	3,500
Catholic Ladies of Columbia.....	3,466
Knights of Father Mathew.....	3,182
Gold Reserve Life Association.....	3,055
Masonic Mutual Life Association.....	2,750
Order of White Cross.....	2,706
Home Fraternal League.....	2,633
Order of Sparta.....	2,506
Order of Iroquois.....	2,503
Iowa Legion of Honor.....	2,453
Legion of the Red Cross.....	2,362
Order of the Amaranth.....	2,464
Occidental Mutual Benefit Association.....	2,420
Modern Romans.....	2,240
Ideal Reserve Life Association.....	2,207
Legion of Honor of Missouri.....	2,140

Christian Burden Bearers Association	1,932
Eastern Star Benevolent Fund	1,879
American Woodmen	1,846
National Home Guards	1,815
American Workmen	1,771
Assurance League of America	1,538
Lincoln Annuity Union	1,499
Home Watchmen of the World	1,439
Farmers Life Insurance Association	1,407
Catholic Family Protective Association	1,399
Mystic Tribe of Montezuma	1,380
United Aid	1,262
Benevolent Knights of America	1,237
Ancient Order of Samaritans	1,205
Select Knights and Ladies	1,147
Guild of the East	1,092
Guardians of America	1,013
National Fraternal Society of the Deaf	989
International Congress	766
Columbian Fraternal Association	675
Kinsman's Mystic Senate	543
Southern Benevolent League	409
Fraternity of Home Protectors	164
Common Brotherhood of America	140

Total 7,471,884

The fraternal beneficiary societies in America have made a remarkable record in low cost of management, in growth and development, with an exceedingly favorable mortality rate, while by the organization and successful maintenance of these institutions the necessity of carrying a life insurance has been brought home to more persons than could have been possibly reached in any other way. Indeed a great authority on insurance matters some time ago publicly stated that the field covered by fraternal societies with their extensive system of local lodges and agents, had really served the purpose of moulding and creating sentiment for life insurance, that had not only been a benefit to such societies themselves, but to the regular life insurance companies as well.

Aside from the issuance of certificates or policies ranging in amount from \$100 to \$5,000, and the payment of

death benefits at a remarkably low cost, together with the undisputed ability of these societies to be perpetuated by proper adjustment of mortality contributions, when the experience of each particular society so requires, the fraternal or social elements of these organizations have accomplished and wrought out works of benevolence and philanthropy in degree impossible to reduce to figures. Well might all co-operative influences and organizations of every character learn the lesson of right relations among individuals and communities from the teachings and practices of the fraternal system, and get from it broader views and a fuller conception of the rights of men and women, and understand better the just limitations of law and government among the people.

In later years some of the fraternal societies have planned to broaden their scope of effort by the establishment of homes for the aged and disabled members and for sanatoria to care for those afflicted with disease. A notable example already in successful operation is the establishment of a sanatorium for the treatment and care of members afflicted with tuberculosis by the largest fraternal beneficiary society in America. When fully completed, this sanatorium will embrace accommodations for 500 patients.

The fundamental principles upon which fraternal societies are organized and permitted to do business; the great purpose and ultimate object in view, with the common approval of the co-operative plan and representative form of government by the people, are sufficient elements to guarantee success and renown. For the highest success of any business there must be the spirit of sympathy and a genuine fellowship somewhere touching the proposition. Especially is this so in an insurance plan and management. All life insurance contemplates the protection of the home and family, and because the spirit upon which the fraternal society is builded, so much more

nearly embodies the spirit of the home and partakes so much more of the family relation than other systems, men do not marvel at the unprecedented growth and splendid attainments recorded by the fraternal system.

Ex-President Roosevelt not long ago said concerning these societies, that they were the greatest power for good government, and the protection of the home in this country; that governments would endure as long as the people protected the great interests represented by these societies, and added: "In working out the great problems which confront the nation we must depend wholly upon the sentiments which actuate and pervade fraternities of this kind, which sentiments are and must remain the brotherhood of man and the sacredness of the American home life."

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CHAPTER XXVIII

INDUSTRIAL LIFE INSURANCE

BY FREDERICK L. HOFFMAN

Definition

INDUSTRIAL insurance is a highly specialized development of legal reserve life insurance peculiarly and successfully adapted to the economic necessities of wage-earners and their dependents. The essential difference between industrial and ordinary insurance is in the method of premium payment in that in the former the premiums are payable weekly and are collected by agents from the houses of the insured, whereas in the latter the premiums are paid quarterly, or at longer intervals, and are payable at the office of the company. Amounts insured for under industrial policies are much smaller than in ordinary insurance, averaging about \$140 at the present time. It further requires to be explained that in industrial insurance the unit consideration is the premium, usually five cents or a multiple thereof, whereas in ordinary insurance the unit consideration is the amount of insurance, usually \$1,000 or a multiple thereof. In all other essentials the business of industrial insurance conforms to the theory and practice of ordinary insurance, except, of course, in so far as methods of home office management and field administration are more complex on account of the larger number of details in industrial insurance arising out of the weekly payments of premiums and their collection from the houses of the insured. The success which has been achieved with this form of insurance is largely due to the painstaking attention to detail combined with the most effective method of supervision and control that the ingenuity of the managers has been able to devise.

English Origin

Industrial insurance was established in England in 1854, when the Prudential Assurance Company of London commenced the issuance of industrial policies in addition to the transaction of an ordinary insurance business on a small scale. Previous to the Prudential, several efforts had been made to popularize industrial insurance, but the attempts had not been successful. It is entirely to the credit of the London Prudential that the experimental stage of the business was successfully passed, and the industrial companies which have subsequently been organized throughout the world have all more or less conformed their methods of office and field administration to the original plan adopted by the London Prudential nearly sixty years ago.

American Origin

In 1875, the Hon. John F. Dryden introduced industrial insurance into the United States by establishing the Prudential Friendly Society at Newark, N. J., the name of which, in 1877, was changed to The Prudential Insurance Company of America. Following The Prudential, the Metropolitan, which had been organized as an ordinary company in 1866, commenced industrial insurance in 1879, and in the same year the business was taken up by the John Hancock Mutual Life of Boston. At the present time there are some twenty-five industrial companies transacting this form of insurance throughout the United States, the more important of which, next to the Metropolitan, Prudential and John Hancock, are the Colonial, the Life Insurance Company of Virginia and the Western and Southern. These six companies, on December 31, 1910, had transacted 97.3 per cent. of the total industrial insurance in force in the United States.

World-Wide Development

Out of decidedly unpromising beginnings, considering the difficult task of educating millions of wage-earners in sound principles of periodical savings and insurance, a truly enormous business has been developed, especially during the last twenty years. On December 31, 1910, the number of industrial policies in force throughout the world was estimated at not less than 65,000,000, insuring approximately \$5,297,500,000, and with a field of operation limited almost entirely to wage-earners and their immediate dependents.

Social Importance

The social importance of this form of insurance in the United States is emphasized in the statement that on December 31, 1910, the number of industrial policies in force was approximately 23,000,000, against 7,000,000 policies in force on the ordinary plan. In the nature of the business the aggregate amount of insurance is, of course, vastly greater in the case of ordinary than industrial insurance, amounting in the former to \$13,227,213,000 of insurance protection on December 31, 1910, and in the latter to \$3,182,373,000.¹ The progress of industrial insurance has been uninterrupted from the introduction of the business in 1875, and while the rate of progress has varied slightly from year to year, the growth of the business conforms to the material and social advance of the nation at large. The per capita amount of industrial insurance in force in the United States was \$0.41 in 1880, increasing to \$11.81 by 1895, and attaining to \$34.12 by December 31, 1910. The progress of industrial insurance is without a parallel in the history of thrift institutions throughout the world.

The Policy Contract

The industrial policy is a brief and plainly worded contract fully within the understanding of people of average

¹ Including \$57,587,179 in force with the Prudential and Metropolitan in Canada.

intelligence. The variations in the text with the different companies are not of material importance except in a few details, to which subsequent reference will be made. The policy contract is usually divided into general conditions, including: first, a qualification as to the payment of claims during the first year of insurance; second, special conditions, including requirements as to the accuracy of the statement of age, the limitations of the agreement, restraints upon assignments, proofs of death, etc.; third, privileges and concessions, including precise definitions of paid-up and cash surrender values, and extended insurance, as well as provisions concerning grace in the payment of premiums, incontestability, revival, change of beneficiary, etc. The introductory paragraph of the industrial policy of a large company reads as follows:

Introductory Policy Clauses

“The.....Life Insurance Company, ...
....., in consideration of the payment of the premium mentioned in the schedule below, on or before each Monday, doth hereby agree, subject to the conditions below and on page two hereof, each of which is hereby made a part of this contract and contracted by the assured to be a part hereof, to pay upon receipt of proofs of the death of the insured, made in the manner, to the extent and upon the blanks required herein, and upon surrender of this policy and all receipt books, the amount stipulated in said schedule. Provided, however, that no obligation is assumed by the company prior to the date hereof, nor unless on said date the insured is alive and in sound health. The company may pay the amount due under this policy to either the beneficiary named below or to the executor or administrator, husband or wife, or any relative by blood or connection by marriage of the insured, or to any other person appearing to said company to be equitably entitled to the same by reason of having incurred expense on behalf of the insured, or for his or her burial; and the production of a receipt signed by

either of said persons shall be conclusive evidence that all claims under this policy have been satisfied.”

Benefits During the First Year

It is the usual practice to pay one-half of the amount of insurance if death occurs during the first six months of policy duration, but this practice varies with infantile policies, which will be subsequently discussed in more detail. Some of the smaller companies pay only one-third of the amount if death occurs within six months from date of policy, and one-half if death occurs after six months and within one year of the date of the policy, the full amount being payable if death occurs after one year. The larger and older companies follow the uniform practice of paying one-half of the face value of the policy if death occurs within six calendar months from date of same, and the full amount if death occurs thereafter.

Period of Grace

The period of grace is invariably four weeks and the policy is lapsed for non-payment during the fifth week, but may be revived, as a rule, within one year from date upon payment of all arrears, provided evidence of the insurability of the insured, satisfactory to the company, is furnished. Although it is the practice to collect the premiums from the houses of the insured, the policies generally contain a clause to the effect that the premiums are payable at the home office, and if for any reason the premiums are not called for, and before the premiums are four weeks in arrears, the policyholder is required to bring or send the premiums due to the home office of the company or to one of its district offices.

Incontestability

Most of the industrial policies are incontestable after one year from the date thereof, provided all premiums

due thereon have been paid. Some of the smaller companies make the period of incontestability two years. Misstatement of age does not invalidate the policy, but if the age of the insured is ascertained to have been misstated, the amount payable in the event of death is the same as the premium paid would have purchased at the correct age when the policy was taken out. In the event of litigation it is usually required that no suit shall be maintainable against the company unless brought within a stipulated period, generally five years next after the cause of action shall accrue. An important provision concerning stipulated limitations of the powers of the agent is included, and the provision governing this matter in the case of one large company reads as follows:

Waiver Clause

“ No condition, provision or privilege of this policy can be waived or modified in any case except by an endorsement hereon signed by the president, one of the vice-presidents, the secretary, one of the assistant secretaries, the actuary, the associate actuary or one of the assistant actuaries. No modification or change shall be made in this policy except such as is in accordance with the law of the state in which the same is issued. No agent has power in behalf of the company to make or modify this or any other contract of insurance, to extend the time for paying a premium, to waive any forfeiture, or to bind the company by making any promise, or making or receiving any representation or information.”

Return Premium Privilege

Within recent years a special privilege has been introduced into the industrial contract to the effect that if the contract is not satisfactory to the insured the same may be surrendered at the office of the superintendent within two weeks after its date, and the premiums paid thereon will be returned.

Conversion into Ordinary

Some of the industrial companies also extend to the insured the option to exchange the industrial policy for insurance on the ordinary plan, provided all premiums have been fully paid for a stated period, usually not less than ten years, and provided further, that the insured is eighteen years of age or over. The practice is to allow for the surrender and release of the industrial policy the full legal reserve, to be applied towards the payment of premiums on the new ordinary policy, with premiums payable annually, semi-annually or quarterly. Evidence satisfactory to the company of the insurability of the industrial policyholder is required.

Dividends and Voluntary Concessions

Most of the industrial policies issued at the present time are on the non-participating plan, but as will subsequently be explained, voluntary concessions have been made by the principal industrial companies, which are equivalent to the payment of voluntary dividends, and which in the aggregate amount to vast sums, which might otherwise be divided as profits among the shareholders of the companies engaged in the business of industrial insurance. One important exception is a mutual industrial insurance company, the policy of which provides as follows:

“ Beginning at the end of the fifth year from its date, if all the premiums then due shall have been paid, this policy shall annually participate in such distribution of the surplus as the company may apportion. Dividends shall be applied in payment of premiums or at the option of the holder may be paid in cash, but should this policy, according to its terms, become a free policy, no further dividends will be payable hereunder.”

Mutual Companies

It is self-evident that in the case of a mutual company the policyholders are entitled to participate in its management, and accordingly the company referred to provides in its policy that, "The assured is hereby notified that by virtue of this policy he is a member of the company, and is entitled to vote either in person or by proxy at any and all meetings of said company. The annual meetings are held at its home office on the second Monday of February in each year, at twelve o'clock noon." Since the company in question had nearly two million industrial policies in force on December 31, 1910, it is obvious that the privilege is not one of practical availability. A stock company very much larger than the mutual referred to has also adopted a similar provision by extending the privilege of voting for the board of directors to its policyholders, but the privilege is necessarily availed of to only a very limited extent.

Copy of Application

Most adult industrial policies are granted on a formal application, which includes a medical examination or a medical inspection, the expense of which is paid by the company. Under the laws of some states each applicant for a policy of insurance is entitled to be furnished with a copy of the application, which is required to be attached to the policy.

Restrictions

Industrial policies contain very few, if any, restrictions such as are usually found in ordinary policies, especially as regards occupation, residence, military service, suicide, etc. The earlier policies contained a number of restrictions of this kind, practically all of which have been done away with. Years ago it was thought advisable

to protect the company against adverse selection by a rule under which a reduction from the amount of insurance otherwise payable during the first year of insurance was made in the event of death being caused by consumption and a few other specified causes. This restriction has long since been removed by all the principal companies engaged in the business of industrial insurance, and frequent assertions to the contrary are not based upon a knowledge of the facts.

Naval and Military Clause

The policies of a few of the smaller companies contain a naval and military service clause, which in the case of one company reads as follows:

“ The insured may serve in the navy or army of the United States or in the state militia in time of peace or for the purpose of maintaining order in case of riot; in time of actual war, however, a written permit must be obtained from the company for such service and an extra premium paid. Should the insured die from service in actual war, without such permit, the company's liability will be restricted to the net reserve on this policy, computed according to the legal standard of the state of
..... ”

Suicide and Consumption Clause

The industrial policy issued by the same company contains the following clause, which illustrates the earlier practice, and which, as has been previously said, is no longer in general vogue:

“ In event of the death of the insured from suicide, whether sane or insane, within one year from the date hereof, the liability of the company shall be limited to a return of the premiums paid on this policy. If death occurs within one year from the date hereof from consumption, bronchitis, disease of the heart, Bright's dis-

ease or cancer, the liability of the company shall be limited to one-half of the amount that would be payable under this policy in consequence of death from any other cause."

Automatic Additional Insurance

Some of the companies grant an increasing amount of insurance after the policy has been two years in force, it being the practice in the case of one company to pay at the end of each two years of policy duration an addition of 1 per cent. of the original amount payable at the death of the insured.

Paid-up Insurance Clause

The paid-up, cash surrender value, and extended insurance provisions are governed by the statutory requirements of the several states, but in actual practice the variations are not important. In the case of one large industrial company the paid-up provision reads that, "If this policy shall become forfeited for the non-payment of any premium after having been in force three full years, provided the policy be not surrendered for its cash value, the company will grant a non-participating paid-up life policy as specified in the following table,¹ provided this policy be legally surrendered to the company within three months after the date to which premiums have been duly paid."

It may be explained that in the case of an adult whole life industrial policy, issued at age 35, for a weekly premium of ten cents, the paid-up value would be \$7.60 at the end of three years, in the case of the company referred to, increasing from year to year to \$34.20 at the end of ten years, and \$76.20 at the end of twenty years.

Automatic Extended Insurance Clause

In the practice of the same company the automatic extended insurance clause reads that: "If this policy

¹ Omitted in the following discussion.

shall become forfeited for the non-payment of any premium after having been in force three full years, provided the policy be not surrendered for its cash value or for a paid-up life policy, the company will without any action on the part of the insured, grant extended insurance dating from the day to which premiums have been duly paid and to continue for the period indicated in the following table. The amount of insurance payable if death occur within the said period shall be the same amount as that which would have been payable if this policy had been continued in force."

Omitting the table, it may be explained that in the case of a whole life industrial policy issued at age 35, at a weekly premium of ten cents, by the company referred to, the extended insurance period at the end of three years of policy duration would be one year and forty-eight weeks, increasing according to policy duration to eight years and one week at the end of ten years, and twelve years and fifty weeks at the end of twenty years.

Cash Surrender Clause

Industrial policies have a cash surrender value, usually after a duration of ten years, and the provision to this effect in the case of the company referred to reads as follows: "At the end of ten years from the date hereof or at the end of any year thereafter, the company will pay as a cash surrender value for this policy the amount fixed by the following table, provided this policy be legally surrendered to the company within three months after the end of said ten years or of any year thereafter."

Omitting the table referred to, it may be explained that in the case of a whole life industrial policy issued at age 35, for a weekly premium of ten cents, in the case of the company referred to, the cash surrender value at the end of ten years would be \$17.68, increasing to \$30.10 at the end of fifteen years, and \$46.98 at the end of twenty years.

Voluntary Dividends and Mortuary Additions

In addition to the contractual provisions for specified privileges in the event of voluntary policy termination, the principal industrial companies have for many years followed the practice of declaring so-called voluntary dividends, payable in cash or in the form of mortuary additions. In the nature of industrial insurance, it is difficult to exactly adjust the amount of insurance to the premium and age of the insured, and a re-adjustment is necessary from time to time, which is best made on the basis of actual experience, by means of voluntary financial concessions to the policyholders.

Retroactive Concessions

The concessions have not been limited, however, merely to the payment of cash or mortuary additions, but they have been extended and among others include a 75-years of age concession, under which all premium payments terminate at the seventy-fifth year of life. All new contracts are issued with this proviso by most of the industrial companies transacting business at the present time, and when the rule was adopted it was made retroactive in the case of existing policy contracts, which, as is hardly necessary to point out, proved of considerable financial value to the insured. The limitations of the present discussion preclude an adequate consideration of what is, without question, one of the most important factors in accounting for the enormous progress made by industrial insurance during recent years. It may be stated, however, that the voluntary concessions include paid-up, cash surrender, and extended insurance clauses, and many millions of dollars have been paid out by the companies on this account, aside from the issue of millions of paid-up policies in the case of which the contracts did not originally provide for a privilege of this kind.

Policies on Children

The foregoing discussion has in the main referred to industrial adult policies, but the scope of industrial insurance comprehends all ages from one to seventy, and in the case of a few small companies even children under one year of age. Since the mortality rate decreases from birth to about age ten or eleven it is obvious that the amounts or benefits payable under infantile policies must increase with the increasing age of the child, and in constructing infantile tables it is the practice to limit the infantile premiums to ages under ten, and the adult premiums to ages ten to seventy, inclusive. Some companies, however, limit the adult table to age sixty-five.

Most of the companies pay about the same amounts for the same age and premium, but there are slight differences in practice as regards the amounts payable in the case of infantile policies during the first year of insurance. As a rule the amount payable in the case of a child insured at age two next birthday is \$12.50 when the duration of insurance has been less than six months, \$25 when the duration is more than six months but less than one year, \$34 when the duration is one year, \$40 at two years, \$48 at three years, \$58, at four years, \$70 at five years, \$110 at six years, \$150 at seven years, and \$190 at eight years. These amounts are payable for a weekly premium of five cents. Policies are also issued for a premium as low as three cents, but no infantile policies are issued with a weekly premium in excess of ten cents.

Limitation of Amounts

The maximum amounts of insurance for which children can be insured¹ are governed by the statutory requirements of the state of New York and several other states, so that speculation on children's lives, or other practices

¹ With one or more companies.

contrary to public policy in connection with the insurance of children, are made impossible. In actual experience extending over nearly forty years in the United States there has never been an authenticated case of child-murder for insurance money in which an affirmative jury verdict was obtained, although serious allegations of such practice have been made from time to time. Since the maximum amount, permitted by law, provides just about enough for reasonable burial and last medical expenses, it is self-evident that practices contrary to public policy are prevented by these statutory requirements, which, however, were, in substance, adopted by the companies themselves long before they were incorporated into the insurance laws of the several states which now have such provisions.

Adult Premium Rates

As has been stated at the outset, the premiums in industrial insurance constitute the unit. These usually range from three, five, ten, fifteen cents, etc., up to seventy cents. The maximum amount which can be insured for under an industrial policy is \$996, at the age of twenty-eight, for a premium of sixty cents a week. The amounts decrease with increasing age in conformity to the theory and practice of legal reserve life insurance, based upon the law of mortality, that the death rate increases with increasing age. Accordingly, for a premium of five cents at age ten the amount payable in the event of death after the policy has been six months in force is \$150, at age twenty the amount payable is \$105, at age thirty it is \$79, at age forty it is \$57, at age fifty it is \$38, and at age sixty it is \$22.¹ Certain limitations govern the insurable amounts at particular ages; thus, for illustration, at age fifteen the limit is \$500, for a weekly premium of twenty cents, while at age sixty the limit is \$242, for a weekly premium of fifty-five cents.

¹ The premium payments cease at age 75.

Five Hundred Dollar Policies

In addition to whole life policies the industrial companies issue adult and infantile endowment policies, and also special policies for \$250 and \$500. In the case of the \$500 policy the premiums are adjusted to the amount, as is the case in ordinary insurance. At age fifteen the weekly premium for a \$500 policy, payable at death but with premiums ceasing at age seventy-five, would be twenty cents, while the corresponding premium for the same amount of insurance at age thirty-five would be thirty-seven cents, and at age fifty the premium would be sixty-six cents. The amounts are payable in the same manner as under regular adult tables, that is, one-half benefit during the first six months, and full benefit after six months.

Adult Endowment Policies

Adult endowment policies are issued, which are payable at death or age eighty; or, in other words, in which the policy matures as an endowment on the first anniversary of its date of issue after the insured reaches age seventy-nine. For a weekly premium of five cents the amount payable at age ten under this form of insurance is \$116, while at age thirty the amount is \$73, and at age fifty it is \$37. A twenty-year adult endowment policy is also issued which matures as an endowment twenty years from date of issue, and under this form of insurance the amount payable in the case of a policy taken out at age ten next birthday, for a five-cent weekly premium, is \$47, while at age thirty it is \$41, and at age fifty the amount is \$32.

Infantile Endowment Policies

Infantile endowment policies are issued under practically the same conditions as those which apply to adult endowment policies except in so far as they are modified by the principles which govern the construction of infantile

rate tables, due to the fact that the mortality in infancy is a decreasing factor from birth to about age ten, while in adult life the mortality rate is an increasing factor from about age ten to the end of life. In the case of an infantile endowment policy, payable at death or age eighty, the amount payable for a weekly premium of five cents in the case of a policy taken out at age two next birthday is \$7.50 during the first six months of insurance, \$15 during the second six months, \$20 after one year, \$25 after two years, \$30 after three years, \$35 after four years, \$55 after five years, \$80 after six years, \$125 after seven years, and \$150 after eight years. The amount remains \$150 throughout the remainder of life until the policy is terminated either by death or maturity on its first anniversary after the insured reaches age seventy-nine.

Infantile Twenty-Year Endowment Policies

In the case of infantile twenty-year endowment policies, the policies mature as endowments twenty years from the date of issue, but in this case the amount payable for a five-cent premium in the case of a policy taken out at age two next birthday is \$12.50 during the first year of duration, \$15 after one year, \$17.50 after two years, \$20 after three years, \$22.50 after four years, \$25 after five years, \$30 after six years, \$35 after seven years, \$40 after eight years, \$45 after nine years, and \$50 after ten years. The policy remains at this amount until it terminates either by the death of the insured or by maturity twenty years from the date of its issue.

Essentials of Field Administration

Primarily because of the weekly premium payment system the business of industrial insurance involves a vastly larger number of individual transactions than the corresponding business of an ordinary insurance com-

pany of equivalent premium income or amount of insurance in force. A full account of the industrial method of field administration and home office management would require a comprehensive treatise and only a brief outline of the salient facts can be given in this discussion. It has been properly said that success in industrial insurance is largely a question of effective supervision and painstaking attention to matters of detail. Accordingly the field organization has been developed with a due regard to almost perfect oversight and office control over the activity and business results of individual agents and the supervising field officials, who are usually designated as superintendents, inspectors, agency organizers, and assistants. The fact that the premiums are required to be collected weekly in the most systematic manner from the houses of the insured involves the necessity of employing agents of integrity and considerable ability, and their effective supervision throughout practically every working hour of the week. The territory of industrial companies is, therefore, divided into districts, which generally coincide with the large cities of the country, although in cities like New York, Chicago, Philadelphia, etc., the large industrial companies have a number of districts, each of which is in charge of a superintendent, who has under him a number of assistant superintendents, and a considerable agency staff.

Duties of the Industrial Agent

The first duty of every agent is to collect, with fidelity and dispatch, the entire outstanding premium account with which he is charged, and so completely has the collecting system been developed that in the case of well-managed industrial companies the average collection percentage runs almost 100. The total amount of the weekly premiums to be collected by individual agents is termed the "debit," which is arrived at by deducting

from the premiums of the total number of policies issued to a particular agency the premiums of the total number of policies lapsed by reason of death, transfer, or other causes. The average weekly debit is at present much larger than in former years, and the usual practice is to have an agent collect not less than \$60 a week. Many agents collect from \$80 to \$100, and quite a fair proportion collect even larger sums. Since the industrial agent is required to solicit for new business, industrial and ordinary, as well as to collect the outstanding premiums on his debit, it is evident that the amount of such collection must not be too large for efficient work, and that the number of houses to be collected from must not be scattered over too wide a territory. Concentration in debits, is, therefore, generally emphasized, and thoroughness in collecting and canvassing is a first principle of success in agency efforts.

'Agents' Instructions

For the guidance of superintendents, assistants, agents, and other field employees, the industrial companies issue carefully prepared instructions, embodied in a manual, which represents the accumulated experience of many years. The first duty insisted upon in the case of all field employees is that they must devote their whole time and energy in serving the interests and increasing the business of the company with which they are connected. To develop an *esprit de corps* it is the general practice to assemble the agency staff once a week for the purpose of discussing business matters pertaining to the company and the individual results achieved or to be achieved, as the case may be. At such meetings questions of new business, lapses, arrears, revivals, collections, claim payments, etc., are talked over and the individual standing of exceptionally successful agents, assistants, or superintendents is emphasized by

bulletins or weekly publications, which tend materially to promote a spirit of co-operation and loyalty in the relations of the field force to the home office.

Class of Agents Employed

New agents are very carefully selected and instructed with painstaking care by assistant superintendents in the carrying out of their duties as collectors, solicitors, and representatives of the company generally. Only men of good standing in the community are employed, whose previous records have been satisfactory in every respect. Largely because of this fact, the industrial agency force of the present day consists of men of whom the industrial companies have every reason to be proud and whose loyalty and efficiency as well as integrity is not exceeded by any similar class of men following commercial or industrial pursuits.

Weekly Accounts

The weekly collections are required to be entered in a collection book which is, without question, one of the most admirable inventions of its kind. The collection book avoids an otherwise enormous amount of bookkeeping with individual policyholders, since the entries therein correspond to the entries in the policyholder's premium receipt book, and the total amounts due, received or receivable are a matter of easy and practically unerring computation. The agent is required to render a weekly account, which contains a statement of arrears and advances with individual policyholders, and the difference between the gross arrears and advance payments must agree with the net balance or net advance payments on the face of the account. In the case of new agents the assistant superintendents are, as a rule, required to certify to the correctness of the arrears, and when these exceed a certain proportion a personal in-

spection of the debit is called for, which usually results in the payment of arrears by delinquent policyholders who may have been neglected by agents more or less unfamiliar with their duties.

Compensation for New Insurance

The agent is furnished with one or more registers, which contain a record in full detail of all the policies issued to him, or revived, transferred and lapsed on his account. The new policies issued from week to week are added to the existing register, from the total of which the new lapses on account of death, transfer, or for other reasons require to be deducted. The agent's commission on account of new insurance is paid only on the net increase, that is, if the new issue is eighty cents weekly premium, and the lapses for reasons other than death or transfer are twenty-five cents, the agent would be paid a commission upon only fifty-five cents, or the net increase actually made. There are minor exceptions to this rule, but the foregoing will illustrate the general principles which underlie the industrial agent's compensation for new business. If the agent were not held responsible for lapses other than those due to death, transfer, or on account of paid-up policies or those surrendered for cash, it obviously would be to his interest to encourage lapses, which evidently would be to the serious detriment of the policyholders and the company. Since the agent himself is pecuniarily interested in the persistency of the business it is evident that he will leave nothing reasonable undone to encourage the policyholders to keep their insurance in force.

The usual compensation for net increase is fifteen times the weekly premium, and the exceptions to this rule are not of sufficient importance to require present consideration. Somewhat more favorable terms are usually given to agents who have been more than five

years in the service of the company and whom, because of their efficiency, it is particularly desirable to retain in the company's employ. Of late years there has been a tendency towards paying minimum guaranteed salaries of from \$12 to \$15 a week, subject to readjustment on the basis of actual results, but as yet this method of compensation has not come generally into vogue.

Prevention of Lapses

With further reference to the prevention of lapses, the instruction books of industrial companies contain a number of important suggestions, one of which reads that "It is considered of the highest importance that every lapse report shall be personally inspected by the assistant superintendent through visiting the policyholders before the schedule is sent to the home office, and the date of last payment as shown on the lapsed policy schedule verified by comparison with the policyholder's receipt book." By this method the interests of the company and the policyholder are effectively protected and needless lapses are avoided.

Encouragement of Revivals

With regard to revivals, the rule of one company reads that the superintendent, agency organizer, or assistant superintendent "should, by constant reminders and personal assistance, demonstrate to the agents the value of revived business." This rule also is obviously decidedly to the interest of the insured.

Inspection of Accounts

The inspection of an agent's debit and the supervision of his work are important duties of the assistant superintendent, and these require to be made regularly and systematically, for the general condition of an agent's account is an almost infallible index of his efficiency, or

the reverse. The general rule is to insist on an inspection of the agent's debit at least once every thirteen weeks, and the debit of a new agent is always inspected within a short time after his employment. Deficiencies are, therefore, of comparatively rare occurrence and due either to dishonesty or violation of the company's rules, including clerical errors. The actual amounts lost through delinquent agents are almost incredibly small in proportion to the vast sums collected.

Canvassing for New Insurance

As has been said before, the agent is not only required to collect his premiums and account weekly for the sums collected, and the condition of his debit, but he must also solicit for new insurance in a systematic and efficient manner. This duty implies canvassing from house to house, and practically the entire existing business of industrial insurance companies has been secured by persistent soliciting from door to door. There are no other means by which the benefits of industrial insurance protection can be brought home to the mass of wage-earners or others to whom industrial insurance offers the only known method of providing with certainty a sum sufficient for the payment of the burial and the last medical expenses, aside from a more or less adequate provision for dependent survivors of the family. Straight canvassing always means systematic, house to house soliciting, and in actual practice this method has been found most effective. Canvassing at random involves much waste of time and opportunity, and the more thoroughly an agent is drilled in straight canvassing, under the immediate supervision of the assistant, or the agency organizer, the more satisfactory will be the business results.

Industrial Ordinary Insurance

The industrial agents of all the large companies are expected to canvass for ordinary insurance, but the

premium payments must be made direct to the companies' offices. The compensation paid on account of ordinary insurance is about the same as that paid by exclusively ordinary companies, and the income derived from this source aids materially in retaining the agent in the company's permanent service.

Essentials of Success

It is pointed out in the "Hints to Agents," published by one of the large companies, that:

"The successful agent is a keen reader of human nature, and should be able to quickly determine the form of policy which best suits the circumstances peculiar to the 'prospect.' If the applicant is in a position to pay for a fair amount of ordinary insurance, it is a loss of time and business to write him for a weekly premium policy. If, on the other hand, he is only able by the strictest economy to pay a premium on a small ordinary policy, it is manifestly evident that he will have difficulty in paying the premiums more than a short time—in that case the real object of life insurance will not have been fulfilled."

Facilities for Changing to Ordinary Insurance

The industrial companies extend every reasonable facility to their industrial policyholders to change from the industrial to the ordinary when the latter is more to the advantage of the insured than the former. The agents' instructions concerning this matter, as published by one of the large companies, reads as follows:

"The agent replacing an industrial policy on his debit by an ordinary policy will be released from the lapse charge, provided premiums for twenty-six weeks have been paid on the industrial policy and the first annual premium is paid on the ordinary policy. The agent writing ordinary to take the place of industrial business which has been transferred to him will be charged with

the industrial lapse; but if premiums for twenty-six weeks have been paid on the industrial policy and the first annual premium is paid on the ordinary, no charge for lapse will be made against either the agent receiving or the agent making the industrial transfer. The same rule will apply to the charging or releasing of the accounts of the assistant superintendents interested."

Required Amounts of New Business

Definite rules govern the writing of new insurance, both industrial and ordinary, and a certain allotment is made in the case of each agent, which he is required to produce. The agent is usually expected to write enough new industrial insurance to produce a net weekly increase of at least twenty cents, which, on the basis of fifteen times, yields a so-called special salary of \$3. Since the average debit in the case of the large companies is about \$80, the regular salary derived from this source, at the rate of 15 per cent. is \$12. In addition to his industrial allotment, the agent is expected to write at least one ordinary policy for \$1,000 each month.

Compensation and Average Earnings

In an increasing proportion of districts it is now the practice to pay a minimum salary to agents of \$12, exclusive of compensation paid on account of ordinary business. The fixed compensation varies with the size of the debit, but the aim is to insist upon results which will yield average earnings of not less than \$15 a week. The assistant superintendents are paid a fixed salary of from \$15 to \$18, and variable additions according to the net results of the business secured by the agents under their supervision. The superintendents usually receive fixed salaries of from \$35 to \$60 a week, but in their case also an additional but variable compensation is paid, according to the business results secured by the district as a whole. In this manner every field employee is vitally interested

in securing the best business results, which include not only a satisfactory net increase in new business but also a low lapse rate, a high revival rate, and a percentage of collection very near to 100.

Extent of Industrial Field Organization

In 1909 the three principal industrial companies had about 750 superintendents, about 3,800 assistants, and about 21,000 agents. The average number of assistants to a superintendent, therefore, was about five, and the average number of agents to an assistant was about six.

Rebating and Twisting Prohibited

As has been previously pointed out, all of the industrial field employees are expected to give their entire time to their work. Agents are not allowed to grant rebates under any consideration, in conformity to statutory requirements which forbid the discounting of premiums and subject the offenders to heavy fines in case of violation. Agents are also not allowed to pay any money or other compensation for services rendered to any person under salary from the company, nor are they permitted to make any charges whatsoever to policyholders in connection with the payment of claims, or for other services.

Rules Against Unfair Competition

The rules are also very strict with regard to the interference with the business of other companies, and agents are specifically enjoined not to slander other agents or to do anything to bring such companies into disrepute. Under the laws of the several states agents are required to be licensed, but the fees on this account are usually paid by the company. The rules with regard to bonding of agents and other field employees vary, but the tendency is to secure the very best of men and to do away with bonding as unnecessary in view of the strict super-

vision exercised, which practically precludes deficiencies or defalcations for any considerable amount.

The Industrial Application Blank

New applicants for industrial insurance must answer a number of important questions concerning their age, occupation, family history, health, etc. The rules are imperative that these questions shall be accurately answered, since the application forms the basis of the contract between the applicant and the company. The rules of one large company in this respect provide that "it is absolutely necessary that each question on the application be separately asked of and answered by the applicant, and the utmost care should be exercised in obtaining full and correct information respecting the age of the applicant and his or her past and present health and habits. The company will rely upon the agent to protect it against over-insurance on advanced lives, misstatement of age, and from any attempt to effect insurance of a speculative character on the lives of relatives, friends or others."

Agent's Responsibility in Risk Selection

The rules of this company further provide that:

"All persons applying for insurance must be seen *personally* and questioned as to their age, health, habits, etc., in order that the agent may be able to judge for himself whether they are desirable risks or not. The performance of this duty by others does not release him from the responsibility of *personally* certifying to the truth of the statements made in the agent's certificate, which statement must in every case bear his signature. Under no circumstances is the agent to canvass for or submit applications from persons of intemperate or immoral habits or inmates of houses of ill fame."

Restricted Applicants

The practice of the companies with regard to applicants who are not considered desirable vary, and such persons must not be solicited at all, or their acceptance by the company is made conditional upon restrictions, which are indicated in the following rule concerning persons employed in the liquor trade:

“Saloon-keepers, bartenders, porters in saloons and persons engaged in the public sale of intoxicants will not be insured for more than \$250 or thereabouts, and in all cases, excepting twenty-year endowment policies, the age will be rated up five years. The company does not wish any particular effort made to get business of this class, but if applications are taken, the actual age next birthday must be given, and, except as noted above, the benefit for the age of five years above the age given must be stated. The question of occupation must be plainly answered, and medical examination is necessary in every case.”

Prohibited Applicants

Among other prohibited risks, according to the rules of one large company, are children who are crippled, inmates of charitable institutions, persons over 70 years old next birthday, intemperate or insane persons, persons whose appearance indicates a consumptive tendency or poor health, persons in extreme poverty, or who are known to be in receipt of charitable aid, persons who have already as much insurance as their means warrant, blind persons, persons who are idiotic or subject to epilepsy, persons who already have as much insurance in this company as is allowed by the table limits, etc. This company also has certain restrictions with regard to occupations as, for illustration, conductors on freight trains, brakemen on freight trains, switchmen, yardmen, section hands, electric linemen, quarrymen, makers of explosives, common sailors, deep sea fishermen, and structural iron workers are not written for more than a ten-cent weekly

premium. It is evident, therefore, that the practice of industrial insurance is well safeguarded against the admission of undesirable risks and the misuse of the system for purposes contrary to public policy. Since the cost of the insurance is largely conditioned by the mortality of the persons insured, it is advisable to exclude classes of risks subject to a decidedly higher death rate, as, for illustration, persons of negro descent, Chinese, etc. The laws of several states prohibit so-called discrimination on account of color, but the laws are based upon the erroneous assumption that the earlier practice of the companies in charging higher rates to negro applicants than to white applicants, was governed by considerations other than the observed differences in the mortality rates.

Negro Applicants

Although the companies are precluded from differential premium rates they are not by law required to solicit negro applicants, but to avoid legal difficulties the rules adopted in this matter are very precise, and in the case of one company read as follows:

“Persons of African descent or people from the Cape Verde Islands are not desired as risks, and agents will not solicit such persons. If, however, they voluntarily apply for insurance, it can not be refused them on the sole ground of their negro blood. In such cases an application must be regularly filled out, with the statement of the agent that the business was not solicited. Such policies, if issued, will not be entitled to royalty or gratuity.”

Chinese Applicants

Another large company specifically provides in its rules that Chinese lives must not be solicited partly because of the observed tendency on the part of the Chinese in this country to live under unsanitary conditions or in the most congested districts of large cities. The company's rules properly provide, therefore, that no person

may be solicited if living under unhealthful surroundings, whether of the Chinese or any other race.

Medical Examinations

If the agent is satisfied that the applicant is acceptable to the company he may submit the application, but according to the rules, which vary on account of differences in state legislation, a medical examination or inspection is required subject to regulations in detail governing the company's medical examiners. In the case of one large company a full medical report is required of all lives fifteen years of age and over where the insurance applied for is \$300 or more, or where the amount applied for will raise the total amount on one life to that sum. Medical examinations are required in the case of this company to be made of all negro applicants fifteen years of age and over; also of all applicants for extended insurance if premiums on the original insurance are more than thirteen weeks in arrears. Medical inspections, which are merely a modification of the medical examination to the extent that a lesser degree of thoroughness is permissible and there are not so many questions to be asked or answered, are made in the case of the company referred to, of all lives not covered by the foregoing rules. In some states there are further rules for medical inspections and reports, concerning which special instructions are issued. The fees for medical examinations are paid by the company and agents are not permitted to visit examiners on company business or to deliver applications to him personally. All inquiries about examinations or delayed applications must be made through the superintendent or the assistant. In cases of postponement, or rejection, a notice is issued to the agent, and if advance premiums have been paid by the applicant they are required to be returned. The rules are strict that applications must never be written upon

persons who have been previously rejected unless permission to this effect has been received from the home office. The limit of amount which divides the industrial medical examination from the medical inspection, in the case of another company, is \$250, and the age is ten years and over, instead of fifteen. These are minor differences which require no further discussion. It may be stated, however, that the medical examiner has, as a rule, explicit instructions not to obtain the signature of the applicant to the agent's report, nor is the agent permitted to obtain the signature of the applicant to the medical report. If a policy is already in force with the company on the life proposed, and the application is for additional insurance, the existing policy must be sent to the home office, attached to the application, for endorsement and stamped "Additional." This rule, of course, is necessary to avoid speculation or over-insurance, as well as for other reasons.

Rules Governing Beneficiaries

The practices of the companies vary somewhat with regard to the rules which govern the beneficiaries under industrial policies, but the principle has been established for many years that the company, in the event of death, may pay the amount due to anyone who appears to be equitably entitled to the proceeds by reason of having incurred expenses of burial or for other purposes on account of the insured to the amount of the claim.

Insurable Interest

The rule of one large company with regard to beneficiaries reads that:

"A policy will not be issued, except for a limited amount, in favor of a friend, non-relative, or other person not having a lawful insurable interest in the life proposed. This means that the beneficiary must be dependent upon the insured for support, or that the insured is

indebted to the beneficiary in an amount sufficient to justify the sum insured, or that the beneficiary has some other substantial pecuniary interest in the life insured, or will be liable for the expenses of the sickness and burial of the insured."

Payment of Claims to Undertakers

There are further rules, with regard to cases where the proposed beneficiary is a creditor or where a non-relative may be named as beneficiary, in the case of an adult risk, but these are of very limited application, since, with few exceptions, the amounts payable under industrial policies go to the immediate relatives of the deceased responsible for the payment of the last burial and medical expenses. The rules are very strict with regard to the payment of claims direct to undertakers, but obviously, in the case of a business where the chief object is security for the payment of burial expenses, the large majority of industrial claims are used wholly or in part to pay for the cost of the funeral, the grave, etc., and the last medical expenses. To guard against abuses, however, specific rules have been adopted by most of the companies, and the following will indicate the general practice:

"Undertakers or saloon-keepers will not be accepted as beneficiaries except under policies on the members of their families. Neither may premiums be collected from or through such persons except for insurance in their families."

Important Legal Considerations

Some companies insert the name of the beneficiary in the policy, but other companies do not follow this practice and there is no established rule, nor is the matter one governed by law or departmental regulations. Under no circumstances, however, is it permissible to write insurance on the lives of persons other than minors with-

out securing their specific and written consent, nor is insurance permitted to be written upon the life of a husband for the benefit of the wife, nor upon the life of the wife for the benefit of the husband, nor upon the life of any person for another person's benefit, unless the life on which the policy is applied for (infants excepted) fully understands and consents to the insurance. Unmarried women are required, in the event of subsequent marriage, to send in the policy to the company for endorsement, stating the full name by marriage, to avoid possible serious subsequent difficulties in the identification of the person.

Rules Governing Delivery of Policy

Before delivering a policy the agent must ascertain whether the insured is in as good health as when the application was written, and if any change whatever has taken place in the health of the insured the agent must not on any account deliver the policy, but return the same immediately to the home office with full information. The industrial policy contract invariably provides that the insured at the time the policy is delivered must be in good health, and this rule is obviously to the best interests of the company, the policyholders and the public at large. In case a policy is lost or destroyed a duplicate is issued upon request, and a charge of ten cents is made for policies so issued except when the policy has been lost or mislaid by an agent of the company.

Industrial Claims

In the event of the death of the insured the superintendent must be promptly notified, and the policy as well as the premium receipt books must be presented when the claim is made and surrendered to the company in return for a printed receipt. The claim adjustment is personally attended to by the superintendent or the

assistant, and as a rule agents are not permitted to settle death claims under any circumstances except in the case of such agents as have been many years in the company's service. Proofs of death must be furnished satisfactory to the company, and forms are furnished for the purpose, including the certificate from the attending physician, the undertaker, and usually from two unrelated witnesses. It is the policy of all the companies to pay all just claims immediately upon receipt of due proof of death, but the practice is fully safeguarded against possible abuses to facilitate the payment of the amount due at the time when the same is most urgently required.

Supervision of Claim Payments

It is the duty of the superintendent and assistant to carefully examine the several forms required to be forwarded with the claim, and according to the rule of one large company:

“ If any point is discovered to which the attention of the company should be called, or if the superintendent, agency organizer, or assistant superintendent has any opinion or suggestion to offer, present full particulars in a letter and securely attach it to the other papers. The superintendent, agency organizer, or assistant superintendent will make himself thoroughly familiar with the forms and the manner in which each is to be filled out; follow to the letter all the rules laid down, and thus enable the home office, not only to avoid the necessity of returning papers for corrections, but to increase the despatch with which the claims are paid.”

As further evidence of the care with which the payment of claims is supervised, the following rule is of interest:

“ The claimant's certificate must be signed by the claimant and the signature properly witnessed. If the claimant is unable to write, his or her mark will be sufficient, provided the names of two persons appear as wit-

nesses thereto. The claimant must be at least twenty-one years of age, and, if there was no close relationship to the deceased, an undertaker's bill, made out in the name of the person by whom it is to be paid, will be required. If the undertaker's bill is much less than the amount of claim, a sworn statement of indebtedness will be required in addition."

Adjustment of Claims

Also note the following, having special reference to the question of age as determined by the date of birth, concerning which the rule reads that:

"In case the answer to the question, 'If a just claim, at what age next birthday when insured do you recommend payment?' does not fully coincide with the facts which appear elsewhere in the papers, care should be taken to give the reasons for such recommendation as may be made. The family record, if there be one, should always be seen, and this fact stated, giving the date of birth as therein recorded. If suspicion be awakened in regard to the insurable condition of the deceased at the date of policy, investigation should be made among the neighbors and former business associates before the certificate is completed."

Medical Certificates

Finally, with regard to the attending physician's certificate, which is required to set forth the cause of death and the duration of the last illness, the rule of the company referred to, and which is practically identical with most of the industrial companies, reads that:

"All questions should be answered and particular attention paid to the request 'Give the names of any other physicians who have attended deceased.' The cause of death should be stated clearly, and all indefinite terms, such as heart failure, asthenia, etc., avoided. If the policy has been in force for less than one year, the

superintendent, agency organizer, or assistant superintendent should call on the doctor and have him verify the statements he made in the medical certificate. If policy was revived and there is any question as to the insurable condition of the deceased at the date of revival, the superintendent, agency organizer or assistant superintendent should ascertain the doctor's opinion of the same."

Settlement of Claims

The claims are paid by check either direct from the home office or through the superintendent of the district in which the death occurs. It is the practice of one large company, that when a claim is not over \$400 in amount the superintendent shall pay the claim by check furnished by the company for that purpose. An exception is made, however, of claims on policyholders of negro descent, in the payment of endowment policies, or policies which have been lost and where a duplicate policy has not been issued.

Mortuary Dividends

On account of the long established practice of the large industrial companies of paying voluntary mortuary dividends, equivalent to a stipulated addition to the amount or face value of the policy, it is necessary in each case where the concession applies to compute from tables provided by the company the full amount payable at death. To this amount it is necessary also to add the amount of premiums which may have been paid in advance. If the age on a policy is found to be incorrect a deduction or addition is required to be made and the adjustment is on the basis of the correct age of the insured at the time the policy was taken out.

Infrequency of Litigation

Special rules govern the adjusting of claims under policies on children in conformity to statutory require-

ments that the amounts payable shall not exceed certain stipulated maximum limits. While the chief consideration in the payment of claims is the fulfillment of the company's contractual obligations and the safeguarding of public interests against practices contrary to public policy, it is an interesting fact that in actual experience, extending over many years, the amount of litigation between industrial policyholders and industrial companies has been very small indeed, and under present conditions the policyholders receive more than the contract calls for in the majority of claim adjustments under policies which have been a number of years in force.

The Future of Industrial Insurance

Industrial insurance is now a thoroughly well established method of family protection, intelligently adjusted to the needs and conditions of wage-earners and their dependents. In the natural evolution of the business constant progress is being made, and every year improvements or new features are introduced into the policy contract, or in the relations of the companies to their policyholders, which justify the belief that in years to come industrial insurance will serve a still larger social and economic purpose than at the present date. For a more comprehensive study of the subject, the literature of industrial insurance affords ample opportunity for research.

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CHAPTER XXIX

MUTUAL LIFE INSURANCE

BY GEORGE T. DEXTER

THE comparative advantages and disadvantages of the mutual and stock plans of insurance have been discussed by the representatives of each system since the dawn of life insurance, with little prospect of ever arriving at a decision which shall be accepted as conclusive by all concerned. After all, the arguments used, in their last analysis, generally amount to a discussion of the comparative merits of companies rather than of plans. As between the best companies of either class, the question is one of more importance to the insured than to the beneficiary, for it resolves itself at last into a matter of comparative cost. In either case the insured must pay the premium and the company will pay the claim. To the beneficiary it is immaterial whether the policy is paid by a mutual or a stock company. There are, it is true, collateral questions involved in the discussion of this subject which will receive due attention, as, for example, the respective merits of mutual and stock control; but, as intimated, most questions of the kind are of interest to the insured only as they affect the item of cost. I take it also that the discussion should be limited to exclusively mutual and stock plans, since the so-called mixed companies are really mutual in essential particulars.

Proper Basis of Comparison

As commonly presented, the question is, will the insured pay more for a given amount of protection on the mutual than on the stock plan; or, stated otherwise, on which plan can the insured obtain the larger protection for a stated sum—such a sum as he may be able to pay?

This question, like all others in life insurance, must be settled on a basis of averages. It will be conceded at once that, for a brief period, the cost will be less on the stock or non-participating plan; while the other side will admit that mutual or participating insurance will be the cheaper, if the policy continues in force through a long period of years. To arrive at a satisfactory conclusion, however, the two plans must be contrasted on the same basis. It is futile to argue that the stock company is administered more economically or efficiently than the mutual, or vice versa. Examples without limit and theories without end may be advanced to sustain either side of the controversy; but such methods amount merely to a discussion of companies and managements, and are hopelessly inconclusive as to the principle involved.

Let us conceive of two companies, respectively stock and mutual, which otherwise are alike in all essential particulars. Both companies commence business at the same time; both are controlled by men of equal ability and of absolute integrity; both, operating under like conditions, progress at the same rate and do virtually the same amount of business yearly; the policies of the two companies are identical in their provisions, neither more liberal nor more restricted than the other. In other words, let us eliminate from the controversy every feature that is not peculiar to one plan or the other, and we shall be prepared to consider intelligently the comparative merits of the two systems, as illustrated by two companies that are in other respects precisely similar.

Exact Cost Cannot be Pre-determined

It is impossible to determine the exact cost of life insurance in advance. We know approximately what the future mortality will probably be in a given number of lives of specified ages, but we do not know precisely. However, as our two companies operate in the same ter-

ritory, select their risks with equal skill, and are managed with like efficiency, it follows that the mortality cost in each will be the same. Again, being on the same reserve basis and managed with equal skill, the interest earnings will be relatively the same. For like reasons, there will be no difference in essential expenses, and it follows that the ultimate cost (cost to the company) of providing protection, whatever it may be, will be precisely the same in each case.

As before stated, however, it is impossible to determine in advance precisely what that ultimate cost *will* be. Neither company can take any chances in respect of this. Both, therefore, must collect money enough in advance to cover the actual future cost beyond a peradventure. They can be sure of doing this only by assuming a rate of interest for the future so low that a higher rate is morally certain to be earned, and by assuming a mortality rate so high, that a lower rate beyond a doubt will be experienced. Unless this course is pursued, we cannot be sure that there may not be a deficit in interest earned or an excess of death claims accruing.

In the matter of expense, the mutual company adds to the net premium a loading which is estimated to be sufficient to cover, not only the cost of management, but, as an additional safeguard, sufficient also to make up any possible deficit in interest or excess in mortality that may occur, or to provide for any other adverse contingency. The stock company, likewise, usually adds a loading to the net premium, but a loading which is generally less than sufficient even to provide for expenses, the company depending upon excess interest that may be earned, or saving in mortality that may be experienced, to meet the deficit in expense funds and provide for other contingencies.

The Overcharge in Life Insurance

Thus the mutual company collects a premium which is intentionally greater than will be required to cover actual future cost; and the stock company does precisely the same thing, the only difference being that the overcharge, or excess over cost, collected as a margin of safety, is less than in the mutual company. As the business proceeds, both companies are able to determine the actual cost from year to year, and in the case of the mutual company the overcharge is returned to the policyholder in the form of so-called dividends. Thus the insured inevitably receives his protection at actual cost, as truly as if the latter had been known in advance, and as truly as if no overcharge at all had been collected. It will not be denied that the stock company likewise includes an overcharge in its premium, nor will it be claimed that the policyholder is legally entitled to a return of such overcharge. In ordinary insurance on the stock plan it belongs to the shareholders and is distributed among them or retained by the company for them. Neither will it do in this discussion to argue that the management of the mutual company may dissipate or waste a part or all of the overcharge, for we have assumed the equal ability and the absolute integrity of both managements. This condition precludes waste or improper use of funds in either case. We are comparing systems and not companies. In mutual insurance the last dollar of the overcharge will be returned to the policyholder; in stock insurance the entire overcharge inures to the benefit of the shareholder. All other things being equal, the cost of life insurance on the mutual plan will be less than on the stock plan, for on the mutual plan only is it possible to provide the policyholder with protection at absolute net cost.

The Supreme Test of Relative Cost

It has been shown that in the case of two companies which are similar in all respects save that one is stock

and the other mutual, and which are operating under like conditions, mutual insurance must inevitably prove the cheaper to the policyholder. It may be said in reply to this argument that the test cannot be practically applied, for two such companies cannot be found. While a concrete example is not needed to prove an obvious truth, a practical test in this case is, nevertheless, available. Several prominent companies write both participating and non-participating policies, and the actual experience of such a company amply demonstrates the lower cost of its participating business. This lower cost is not due in such case to a difference in companies, for the test is made in a single company. It may be claimed, however, that such company purposely charges a high non-participating rate in order to make the best possible showing for participating insurance—in short, that its reason for writing non-participating business at all is to earn a profit thereon for its participating policies. Let us then test the question by the experience of a typical stock company which now writes and, with the exception of a very brief period, has always written non-participating life insurance *exclusively*. If the particular company were named, it would be recognized at once as of the highest excellence—a company conservatively conducted, of impregnable strength, against whose management there has never been a word of criticism or a breath of suspicion. The managers are men who, in spite of what their personal interest as shareholders might dictate, will never fail to return to the limited number of participating policies written by the company during the one brief period, the entire overcharge in the premium, as ascertained from year to year. The following exhibit shows the actual net cost for eight years of two ordinary life policies of \$10,000 each, on the participating and non-participating plans respectively, which were issued by the company during the brief period referred to, in which both classes of insurance were written.

Policies of \$10,000 Issued in 1903

Policy Year Ending in		Participating Policy Premium \$281.10		Non-Participating Policy Premium \$227.00	
		Dividend	Net Cost	Cost	Saving
1904	Dividend end of first year..	\$43.40			
	Net cost of first year.....		\$237.70	\$227.00	\$10.70
1905	Dividend end of second year..	45.80			
	Net cost of second year...		235.30	227.00	8.30
1906	Dividend end of third year...	48.10			
	Net cost of third year....		233.00	227.00	6.00
1907	Dividend end of fourth year..	50.10			
	Net cost of fourth year...		231.00	227.00	4.00
1908	Dividend end of fifth year...	52.30			
	Net cost of fifth year.....		228.80	227.00	1.80
1909	Dividend end of sixth year...	54.30			
	Net cost of sixth year....		226.80	227.00	-0.20*
1910	Dividend end of seventh year..	56.10			
	Net cost of seventh year...		225.00	227.00	-2.00
1911	Dividend end of eighth year..	57.90			
	Net cost of eighth year...		223.20	227.00	-3.80

*Loss on non-participating.

Could a fairer test of the respective merits of stock and mutual insurance be devised? It will be seen that during the first five years only was the non-participating policy the cheaper. The sixth year shows a small balance in favor of the participating contract, with a rapidly increasing gain in the next two years. This is the experience of two policies under precisely the same conditions from the beginning, with no conceivable reason to suppose that the participating contract has been especially favored. The net cost of the participating policy has grown less each year, and a steady decrease in cost during the remaining lifetime of the insured may be anticipated, assuming a continuance of the present superb management of the company and the prevalence of like conditions in the future.

Shall Policyholders or Stockholders Control?

Leaving the question of cost, we pass to a discussion of the relative merits of mutual and stock control. It is

superfluous to affirm that the entire assets of a mutual life insurance company, both reserves and surplus, belong exclusively to the policyholders. As much will be conceded as to the reserves of the stock company; and it is perhaps an open question whether even the surplus and all other funds of the company, not originally and directly contributed by the stockholders, do not in equity belong to the policyholders. It is certain that, aside from the comparatively small amount originally paid in by the stockholders in cash, the entire assets of a life insurance company have been derived from the premiums paid by the policyholders. The question is, then, should the policyholders be permitted to control their own funds, look after their own interests and manage their own affairs; or shall these be controlled by a small body of self-appointed administrators, who may perhaps be primarily concerned in looking after their own peculiar interests?

It is alleged that the very fact that the stockholders have staked their own money upon the success of the company, is a guaranty that its affairs will be better administered than those of a mutual organization, whose officials have nothing to lose through the mismanagement or betrayal of their trust, other than their own official positions. This in general is a question of tendencies and contingencies, to be argued by citing individual instances pro and con, examples of this company and that, without the possibility of ever arriving at a decisive conclusion. It might well be dismissed with the statement that men of probity and conscientious regard for duty still exist and are found in the managements of both mutual and stock companies—men who recognize that life insurance is a sacred trust, and to whom personal honor and integrity are valued infinitely beyond official position and individual interest. We started out, indeed, with a proposition to limit this discussion to companies that are alike in the unimpeachable character of the men who manage

them. In that case the self-interest of stockholders (which might in some degree be adverse to the interests of policyholders) would not be a factor, for the officials of both companies would be moved only by their sense of right and duty as trustees. Under such conditions the argument counts for nothing.

Interests of Mutual Policyholders the Better Protected

As a question of tendencies, however, the suggestion may be entitled to further notice, for good men do sometimes lapse from virtue, and life insurance officials are no exception. In that case the policyholders of a mutual company would be the better protected for several reasons.

It is urged that a compact and limited body of stockholders can act more quickly in removing derelict officials than can the widely scattered policyholders of a mutual company. Unfortunately, the "body of stockholders" may be *too compact*, as when the control (a majority of the stock) is vested in a single individual, or perhaps in a small number of individuals whose interests are identical. These must decide upon the question of the "dereliction of management"—*their own management*; and the decision is not unlikely to turn upon the point whether the policyholders' interests or their own are affected. The policyholders themselves have no voice in the matter. This observation is especially pertinent to the stock control of a company doing business largely on the mutual plan. A constitutional monarchy, or even a despotism, may sometimes, for a limited period, give the people a better government than a democracy; nevertheless, the people prefer to retain the right to govern themselves, whether they exercise it effectively or neglect it.

The readiness with which a compact body of stockholders may act in effecting a change of management has had abundant and painful illustration in numerous in-

stances. A recent case, involving several abrupt—not to say disastrous—changes of control in the course of two or three years and the final reinsurance of the company, is fresh in the minds of all. Good men may manage a stock company today, but the policyholders do not know who their master or masters will be tomorrow, for the control may pass in a night. The present management of a stock company may be efficient, honest, in every way commendable—a management to which the transfer of control to self-seeking or designing interests would be abhorrent; but good men die and bad men, incompetent men, crafty, self-seeking men succeed to their estates. The very ease with which a change of management may be effected, the uncertain tenure of office of competent and trustworthy officials, is the feature of stock control which is most dangerous and most to be deprecated.

On the other hand, conceding that prompt action on the part of a widely scattered body of policyholders be not feasible, the celerity with which insurance departments or legislatures, acting at the behest of policyholders or in their interest, may oust an unsatisfactory management of a *mutual* company, has been repeatedly demonstrated. Possibly the state might likewise summarily depose the management of a stock company, depriving shareholders of the right to name their own officers, but I do not now recall that such power, if it exists, has ever been exercised.

Mutual Policyholders do Control

Theoretically, the trustees of a mutual company are chosen by the policyholders, but it is alleged that policyholders rarely take the trouble to vote, and that existing officials may easily influence enough nearby members and friends to enable them to perpetuate their own control. It is undoubtedly true that in most mutual elections few votes are cast. Under the New York law, however, policyholders have every opportunity to take an effective

part in the choice of directors and do so when occasion requires. At least seven months prior to every election, the board of directors must nominate candidates for every vacancy to be filled, the nominees to constitute the "administration ticket." Any 100 or more policyholders, who are qualified electors, may also make independent nominations for one or more vacancies to be filled at such election. The names of all candidates, including the administration ticket and the independent nominees named by the policyholders, are placed upon an official ballot, a copy of which, at least three months before the date of election, must be sent to every policyholder whose insurance has been in force one year or more, with full instructions as to manner of voting. The ballots are returned by mail and remain in the joint custody of the insurance department and the company until the day of election, when they are deposited in the ballot box along with those cast by policyholders who appear at the polls in person. Thus every facility is afforded the members of a mutual company to nominate candidates in opposition to the administration ticket and to vote according to their several preferences. A single candidate, or a number of candidates jointly, may easily secure the signatures of a hundred policyholders to the nomination papers, with the certainty that every qualified elector will have an opportunity to vote the ballot if he so desires, and to have it counted as voted. If no independent nominations are made, voting by mail is dispensed with, for the election of the administration ticket is a foregone conclusion. Accordingly few ballots are cast under such conditions. If, however, extended dissatisfaction prevails among policyholders, whether rightly or wrongly, or if ambitious or designing men seek to get control of the company, there *will be* independent nominations and the policyholders *will vote*. A notable instance in point may be cited. The election of trustees for the two great

mutual companies of New York, held in November, 1906, resulted in the polling of a large vote in each company, representing a considerable majority of the entire membership and sufficient to attest the independent thought and action of the policyholders. It is not to be expected that policyholders, when entirely satisfied with the conduct of their affairs, will seek a change of management, or that they will take the trouble to vote when the continuance of such management is not endangered; but it is no less evident that when a change of management is *desired*, or an undesirable change is *feared*, they will express themselves at the polls for or against the proposition, and that under the mutual system they have every facility for doing so.

The Additional Margin of Safety

The question of first importance in life insurance, however, is that of strength and safety. Without doubt, legal reserve life insurance is today the safest of human institutions; nevertheless, the individual company can in no case be pronounced absolutely safe against disaster for all time to come. This question is entitled to consideration in weighing the respective merits of mutual and stock insurance. No one can foretell the contingencies of the future or say to what tests of strength life insurance may be subjected hereafter by reason of wars, pestilence, adverse legislation, inefficient management, oppressive taxation, etc. The companies are daily assuming fixed obligations, all of which must be fulfilled to the last iota—in the near future or many years hence—with no power to revoke the contract or withdraw from the undertaking, no right of modification in any degree and no possibility of defense on any grounds or under any circumstances.

It is for this reason that the actuary of the mutual company, keeping in mind that the ability to fulfill all contracts at all times and in every contingency is of the

first importance in life insurance, includes in the loading for expenses a further sum as an additional margin of safety. It is the larger loading and this alone that accounts for the larger gross premium of the mutual company, the *net premiums* of stock and mutual organizations on the same reserve basis being precisely the same. This larger loading, or larger gross premium, of the mutual company will enable it the better to withstand any unusual strain that may come in the future. Whether such contingency be regarded as near or remote, the possibility of it will not be questioned; and the provision in the premium for that contingency adds nothing to the burdens of the mutual policyholder, for the overcharge is returned at the end of each year, as soon as it is known that there has been an overcharge and the amount of it.

To some extent this advantage in respect of safety is offset in the stock company by a paid-in capital and an accumulated surplus; but all mutual companies likewise carry a contingency reserve corresponding to the accumulated surplus of the stock company. On the other hand, the capital of the stock company would be subject to rapid depletion or ultimate extinction in any extraordinary or long-continued strain; while the redundant premiums of the mutual company constitute a reserve strength co-existent with outstanding obligations themselves. If it be argued in any case that the accumulated surplus of a particular stock company is greater than that of a given mutual company, we are merely discussing the merits of companies and not of systems; just as would be the case if it were pointed out that the capital of most stock companies is so inconsiderable as to be negligible in the matter of security.

Some of the Arguments Urged Against the Mutual Plan

It has been shown that, if we eliminate from the discussion every feature or condition which is not peculiar to

one plan or the other, so that we may contrast systems and not companies, mutual insurance is cheaper to the policyholder than stock, affords greater assurance of safety, and better protects the interests of the insured. Inasmuch, however, as the question is commonly discussed by comparing companies, or by contrasting tendencies under special conditions, it may be well to note some of the points that are usually made against the mutual plan.

It is said there is danger in mutual insurance that the company, in order to show low net cost for competitive purposes, may be tempted to return larger dividends than are earned, necessitating retrenchment at a later date. Granting for argument's sake that there is such danger, it is no less probable that the stock company, because of the exigencies of competition, may adopt a scale of premiums which will prove later to be lower than actual cost. The difference in the two hazards is vital. If the dividends of the mutual company are too large, they can be reduced before serious trouble ensues; but the stock company will be helpless to alter existing contracts by increasing premiums that entail a loss; on the contrary, it will be obliged to continue them to the end even at the risk of insolvency.

If There Should be no Dividends

A standing argument in favor of stock rates is to the effect that "the policyholder of a stock company knows just what his insurance will cost, now and in the future, everything being guaranteed—a thing impossible in a mutual company for the reason that one cannot know in advance what future dividends will be, nor even," it is alleged, "that there will be any dividends at all."

In two companies equally well managed and similar in other particulars save in the plan of organization, the policyholder knows that protection in the mutual com-

pany will at least be had at actual cost; he knows also that in the stock company he will have to pay the same actual cost, plus the overcharge in the premium, which inures to the benefit of the stockholders. Again, granting that adverse conditions—inimical legislation, long continued business depression, wars, epidemics, etc.—may at some future time be such that the mutual company can apportion no dividends at all; it follows that when the time comes that the whole gross premium of the mutual company will be required to enable it to fulfill its contracts, leaving nothing at all for dividends, the exactly similar stock company, under like conditions, with its much smaller premiums, will be unable to meet its obligations at all.

CHAPTER XXX

STOCK LIFE INSURANCE

BY JAMES M. CRAIG

LIFE insurance companies may be classified:

Mutual,
Stock, and
Mixed,

and policies of life insurance may be classified:

Participating, and
Non-participating or stock plan.

A mutual life insurance company is one where there is no capital stock and whose trustees are elected by the policyholders. It has always been taken for granted by the public that all of the trustees of mutual life insurance companies were chosen from its policyholders, but it recently developed in a large and well established company of this character that six of its newly elected trustees were not policyholders and their election was sustained by the court.

A stock company is one having a capital stock and whose directors are elected by the stockholders.

A mixed company is one combining some of the features of both mutual and stock companies.

The laws of some of the states at the present time prohibit a company writing both participating and non-participating insurance, so that as a general proposition companies writing both participating and non-participating insurance may be eliminated from consideration.

In recent years, and only in recent years, the capital stock of a company has been counted as a liability. A few states have legislated on the subject, but the uniform life blank for the annual report of life insurance com-

panies adopted by all the insurance commissioners assumes it to be a liability irrespective of whether the law requires it or not. This makes one of three things necessary in the operation of a stock company.

FIRST. That the stockholders shall stand ready to make up any deficit that may exist between the liabilities and assets, or

SECOND. That the capital stock shall be sold at such a sum in excess of its par value as to produce a working capital, and that this process shall go on from year to year until the business of the company is on a self-sustaining basis, or

THIRD. That an agency company be formed to supply the funds for the payment of a portion of the expenses.

It is a matter of record that the stockholders of one company during the past thirteen years contributed more than \$1,500,000 over and above the amount of capital stock in order to maintain its solvency. The capital stock of the company has not been increased because of these contributions for the reason that if they had been so applied, the object in view of maintaining the solvency of the company would not have been secured.

It is also a matter of record that the stockholders of another company, which operates under the plan of selling stock at a premium, have paid more than \$300,000 during the last four years, as a premium in excess of the par value of the stock.

The third plan has received a decided check by the passage of laws in many of the states prohibiting such connection.

It costs a large amount of money to carry a life insurance company up to the time when it shall be self-sustaining. This is a fundamental truth with which everybody who knows anything about the business of life insurance is acquainted.

An effort has been made in recent years to recognize

this fact indirectly through legislation in the form of modified rules for the valuation of policies which reduce the liabilities.

Taking it for granted that in consequence of the recent history of life insurance there was a popular demand for the formation of new companies, which seems to have been verified by the large number which have been formed in the last three or four years, it is hard to understand why it was made so difficult for new companies successfully to enter the field by requiring that capital stock, which is an essential element in the formation of a new company, should be considered as a liability, and also prohibiting the formation of subsidiary companies whose purpose was to supply the necessary funds without adding a corresponding liability to the insurance company.

On the advisability of the formation of new companies the issue should be made quite clear. It is evident from a perusal of the report of the New York Legislative Insurance Investigating Committee commonly known as the "Armstrong Committee" that the members of that committee were in favor of the formation of new companies and the valuation section of the law was amended for the benefit of such companies, but it is a noteworthy fact that among the list of New York companies now transacting business there is not one that was organized since the amended law went into effect. This is noteworthy because there is more life insurance transacted in the state of New York than in any other state and the conclusion seems inevitable that from a practical point of view the law does not invite the formation of new companies notwithstanding the intention of those who framed it.

It seems to be recognized that at the present time it is impossible, or at least impracticable, to form even a mutual life insurance company without the aid of capital stock. Section 82 of the Massachusetts Law may be taken

as a fair sample of legislation designed to overcome the difficulty and reads as follows:

“ The stockholders of the guaranty capital of any such company shall be entitled to such annual dividends, not exceeding eight per cent., payable from the net surplus, as may have been agreed upon in the subscription thereof. Such guaranty capital shall be redeemed, by appropriation of net surplus for that purpose, whenever the net surplus is twice the amount of such guaranty capital.”

There is one evil connected with the sale of stock which is sold at a premium, and that is the commission which seems to be required to effect its sale. Any loss like this to a company newly formed is a very serious thing, and if it could be avoided by selling the stock at par without commission and without having it counted as a liability, it would seem as if the interests of the public would be better served thereby.

Stock plan insurance as generally understood embraces the following:

1. Low premiums, certain in amount.
2. Definite payment of definite sums at definite times.
3. No dividends charged for, hence none paid.
4. No element of chance, no uncertainty.

In other words, “ Plain business contracts . . . which tell their whole story upon their face; which leave nothing to the imagination; borrow nothing from hope; require definite conditions and make definite promises in dollars and cents.”

Let us consider these elements briefly in their order.

Low Premiums, Certain in Amount

Any calculation of a life insurance premium depends upon the three primary factors of mortality, interest and expense. The mortality and interest elements are not within the control of the officers of a company and cannot be anticipated with accuracy. The expense element,

while under the control of the management, is likewise not susceptible to exact calculation; so that it is impossible to compute a gross premium that shall represent the actual cost of a policy of life insurance. The best that can be done is to compute a fair premium on the basis of past experience which will allow for a small margin of profit on the capital invested and appeal to the public for support on the basis of low premiums which are certain in amount.

Definite Payment of Definite Sums at Definite Times

The element of definiteness eliminates from a policyholder's mind the question of what his premium may amount to the next or any subsequent year. He has no chance of being disgusted if the premium is larger than the agent led him to expect it would be. A man makes provision for his premium in precisely the same manner that he does for his rent or the interest on his mortgage. He does not look for any reduction on these and his mind is not disturbed by any such possibility. These premiums may be larger sometime in the future than would be required in a mutual company, but only for those policyholders who persist up to that point. To all other policyholders that time would never be reached.

No Dividend Charged for, Hence None Paid

A non-participating policy as generally understood pays its dividends from the start by cutting down the premium. It leaves the surplus in the pockets of the policyholder for him to invest as he pleases. The phrase "as generally understood" is used because it may be a surprise to many but it is nevertheless true that most of the policies issued by mutual life insurance companies on the deferred dividend plan proved to be non-participating policies. They were non-participating policies at high mutual rates of premiums. This was so because less than half of the members kept their policies alive until the

distribution period, and the remainder, constituting more than one-half, received no benefit whatever from any surplus that was accumulated and, therefore, their policies were non-participating. There are thousands of such policies in force to-day and all of them will prove to be non-participating contracts except such as are kept in force to the end of the distribution periods.

A company issuing non-participating policies cannot pay as large commissions as a company issuing participating policies, because the loadings on its premiums are not so large. Even if it did pay the same rate of commission, a simple illustration will show that the policyholder contributes more in dollars and cents on a participating policy than he does on a non-participating one. Let us take a twenty-payment life policy issued at age forty in one of the leading mutual companies and a like policy in a company issuing non-participating contracts. The premium for \$1,000 in one is \$42.79, and in the other \$33.46. If we assume a first year's commission of 40 per cent. in both cases, the first company would pay \$17.12, and the other \$13.38. Here is a difference of \$3.74 paid out in commission and justified only on the basis that it is perfectly proper to make an overcharge to exemplify the beauty of mutuality in returning to the policyholder the excess of premiums paid over the cost. The difference in commission would of course be greater than \$3.74 because the rate of commission paid on the non-participating premium would not be as high as on the mutual premium, but whatever the difference is, the policyholder is charged with it to reduce the amount returned to him.

No Element of Chance, No Uncertainty

While it is true that the element of chance in life insurance appealed in the past very strongly to the public mind, there have been evidences in recent years that the returns on deferred dividend policies have been so much

smaller than policyholders were led to expect, as to cause a decided change, and men are not now accepting promises of dividends with the same degree of faith as formerly.

It may be claimed that such faith is not necessary at the present time because deferred dividends have practically been eliminated and nearly all participating policies are now written on the annual dividend plan. It must be evident, however, to a casual observer that the competition of mutual life insurance companies on the annual dividend plan is as keen to-day as it was in former years on the deferred dividend plan. There is no doubt that the estimates of future profits were very alluring when the distribution of such profits was deferred for a period of twenty years, but no man can go over the list of companies which are paying dividends at the end of the first policy year at the present time without being forced to the conclusion that the one great aim of such companies is to make the best possible showing at the end of the first policy year and that this showing is undoubtedly intended for use as the basis of future returns to policyholders. These annual dividends are calculated on a theory as to distribution of first year's expenses unheard of a few years ago. As an indication of the fierceness of competition along this line it may be stated that in 1910 one leading company paid a dividend of \$5.57 on a policy issued in 1909 as against \$3.32 paid in 1908 on a similar policy issued in 1907. This is an increase of about 70 per cent. Another leading company paid \$4.14 in 1910 on a policy issued in 1909 as against \$2.61 in 1908 on a similar policy issued in 1907. This shows an increase of about 60 per cent.

The non-forfeiture laws of the different states have been based on the assumption that the full reserve was not accumulated until the end of the third policy year and, therefore, that this was the proper time at which

surrender values should begin. If it be true that mutual companies can pay dividends to policyholders at the end of the first year it would seem to follow that not only had the full reserve been accumulated at that time, but in addition a surplus from which distribution to policyholders could be made. At any rate if companies can pay dividends to policyholders at the end of the first year it is a strong argument in favor of earlier cash surrender values for participating policies and it would be exceedingly difficult to convince legislators to the contrary.

It would seem that if one company can show a surplus at the end of the first policy year, all other companies charging the same premiums and incurring the same expense and claim ratios during the first year should also show a surplus, and if under these conditions some companies cannot earn any surplus during the first year, it necessarily follows that the company claiming a surplus must have used other funds than first year's premiums to defray a part of the first year's expenses. The report of one representative mutual company shows an expenditure of 55 per cent. of first year's premiums for commissions and medical fees. If to this be added 5 per cent. for general expenses and taxes, there is not enough left to equal the terminal reserve, without making allowance for any death claims; and yet this same company pays a large dividend to policyholders at the end of the first year.

The question naturally arises, how can this be done? It so happens that the company in question is old and well established with a large surplus. It is claimed by some that the expenses of the first year ought not to be wholly charged against the first year's receipts but should be distributed over a number of years. It is evident, however, that the expenses are paid in cash and must be obtained from some source, and if they are not wholly paid from first year's premiums, the excess over

the amount so actually charged must be borrowed from some other fund. On this basis the primary object is to fix on the scale of dividends desired at the end of the first year, and then calculate how much is necessary to borrow from the future to make good. It is also a question whether it is not the practice of some companies to divert gains from mortality, lapses and surrenders towards the reduction of first year's expenses.

These may have been purely theoretical questions in the past, but at the present time when there is strong competition among mutual companies on annual dividends, with an apparent effort to make a good exhibit at the end of the first year, it becomes a serious practical question and one which if the companies do not themselves regulate may become an evil of such magnitude as to call for legislative action. The methods of companies are scrutinized to-day with a keener interest than ever before and the question may become a live one in the near future, whether on the basis of equitable dealing, a well established mutual company holding a large surplus ought to pay dividends that have not actually been earned.

It is one thing for a mutual company as a going concern to use a portion of its accumulated surplus to make up the deficit in the reserve of the earlier years and quite another thing after it has thus made up the deficit to discount future hypothetical profits for dividends to policyholders.

This surplus of a mutual company which is used to make good the deficiency in reserve in the early years performs precisely the same function that capital stock performed when it was not counted as a liability.

The table following exhibits the annual premiums for the different ages for \$1,000 of insurance on the twenty-payment life plan by three of the largest mutual life insurance companies, together with a corresponding table

of rates issued by a leading non-participating company, also a table of non-participating rates on the fifteen-payment life plan. It will be seen that the non-participating fifteen-payment life rates are lower at all ages than the mutual rates on the twenty-payment life plan:

Ages	Participating Rates per \$1,000—Twenty Payment Life plan.	Non-Participating Rates per \$1,000 Twenty Payment Life plan.	Non-Participating Rates per \$1,000 Fifteen Payment Life plan.
21	\$29.84	\$22.79	\$27.51
22	30.31	23.17	27.97
23	30.80	23.57	28.44
24	31.31	23.98	28.91
25	31.83	24.42	29.44
26	32.37	24.85	29.94
27	32.94	25.31	30.49
28	33.52	25.79	31.06
29	34.13	26.28	31.65
30	34.76	26.80	32.27
31	35.42	27.35	32.89
32	36.11	27.92	33.55
33	36.82	28.49	34.24
34	37.56	29.11	34.95
35	38.34	29.76	35.69
36	39.15	30.43	36.46
37	40.00	31.13	37.27
38	40.89	31.88	38.12
39	41.81	32.64	38.98
40	42.79	33.46	39.91
41	43.82	34.32	40.87
42	44.90	35.21	41.86
43	46.04	36.17	42.91
44	47.25	37.17	44.01
45	48.52	38.24	45.16
46	49.87	39.36	46.39
47	51.31	40.56	47.66
48	52.83	41.83	49.01
49	54.45	43.18	50.41
50	56.17	44.61	51.90
51	58.01	46.14	53.48
52	59.97	47.76	55.13
53	62.06	49.50	56.89
54	64.29	51.36	58.74
55	66.69	53.35	60.71
56	69.26	55.48	62.80
57	72.01	57.76	65.02
58	74.98	60.21	67.38
59	78.16	62.84	69.90
60	81.60	65.68	72.59

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